

A HISTORY OF
THE CANTERBURY
FROZEN MEAT COMPANY
LIMITED

1882-1957

THE CANTERBURY
FROZEN MEAT COMPANY LTD.

The Canterbury Frozen Meat Company Ltd.

THE FIRST SEVENTY-FIVE YEARS

by

G. R. MACDONALD

*With the help of researches and
material collected by D. W. BAIN*

CHRISTCHURCH

1957

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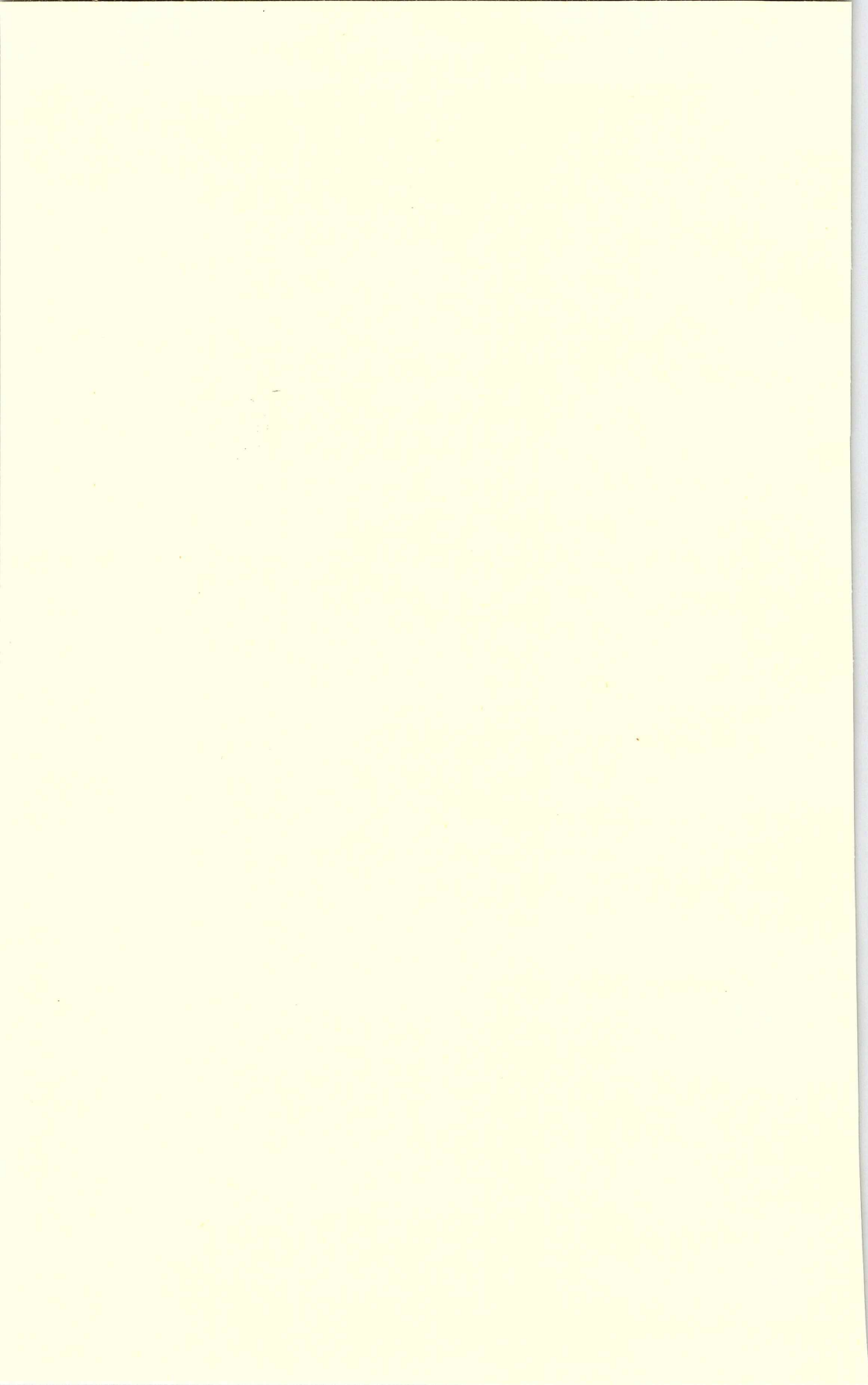
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Introduction

DURING THE EIGHTEEN-EIGHTIES Canterbury was going through a period of steadily falling prices and worsening trade. Wheat prices for export were often so low that farmers had to repay part of the advances made against their crops. The boiling-down companies had practically all gone out of business, the prices for tinned meat having dropped so low that they were unable to operate any longer. Farmers were therefore faced with the gloomy prospect of having no export market for surplus wheat and no way of dealing with surplus mutton. The process of refrigeration had already been evolved in America and was in use there and in Australia, but New Zealand was surprisingly slow in taking it up. The first cargo of frozen meat to leave New Zealand was actually shipped from Port Chalmers in the ship *Dunedin*, in 1882, and the credit must go to W. S. Davidson and T. Brydone, heads of the New Zealand and Australian Land Company. The Canterbury Frozen Meat Company was the first to be formed and to operate in Canterbury and its foundation and rapid progress were solely due to the energy, foresight and driving force of John Grigg, with the able assistance of Frederick Waymouth, first secretary of the Company. John Grigg was a liberal-minded, far-sighted man of great courage and imagination. All his life he ran great risks, and Canterbury rather than he himself reaped the reward. Refrigeration could not fend off the failing trade of the 'eighties and the disastrous slump of the 'nineties; but without refrigeration conditions would have been infinitely worse. Per head of population New Zealand is one of the most prosperous and wealthy countries in the world to-day, and almost the whole of the great advance made in the last 70 years must be put down to refrigeration. This little book attempts to trace the

INTRODUCTION

history of the Canterbury Frozen Meat Company from its foundation to the present day, and that history represents on a smaller scale the history of refrigeration in New Zealand.

The author wishes to acknowledge the help given by L. D. Cotterill, whose reading of the first draft of the book resulted in many improvements in the text. In addition, L. P. Symes, whose experience in the scientific side of refrigeration is without equal in New Zealand, has contributed a most valuable chapter dealing with technical developments.

CHAPTER I

Canterbury in the 'Seventies

THE PRESERVATION of perishable foodstuffs is taken so completely for granted nowadays that it is hard to realise that freezing and shipping of such things as meat, butter, cheese and fruit has only been going on for about 80 years. The world would now be quite unable to maintain its present standard of living without it. Perhaps in another one hundred years refrigeration as a method of preserving will be as much out of date as the steam engine is at present. Whether that be so or not, refrigeration came in the nick of time to save Canterbury from a very awkward predicament. It was being realised that New Zealand as a country and Canterbury in particular was the most favoured place in the world for the turning out of prime fat stock of the highest quality and at the lowest cost. But as it was practically impossible to send any considerable quantity of stock away alive, it looked as though these wonderful gifts of Nature would be to a large extent wasted, and Canterbury had no considerable assets to turn to except its soil and its climate.

One man in particular must have been thinking very hard over this problem. John Grigg had already by the beginning of the 'eighties brought Longbeach to a high state of cultivation, though he continued to improve it further. He was a strong advocate of mixed farming as against continual cropping, and he was early in the field with the fattening breeds of sheep. It was said that on Sunday afternoons he used to go down to the beach and lie on his back and dream and plan. The problem of disposing of surplus stock must have occupied a good proportion of his thoughts. He

was at this time by far the biggest producer of high class meat in the province. As he never wasted any time once he had made up his mind, it was no wonder that things started to move. He must have seen that refrigeration offered the only chance for Canterbury in general, and for him in particular, to continue to make progress.

Canterbury had reached the point of being fully stocked by about 1870, taking into consideration the comparatively low state of cultivation on the Plains at that time. The railway line was creeping towards the Selwyn. None of the big rivers to the South of Christchurch was bridged. Most of the country was still in large grazing runs and was under tussock. There were no water races and lack of water restricted stocking with sheep. The big stations all had their own boiling-down plants, but shortage of fuel made them difficult to work. Most of them only realised the skins and the tallow from the old merino ewes, which were kept till they were pretty well worn out. At St. Leonards they used to put hind legs from the better sheep into casks and pour in tallow to preserve them.

Late in the 'sixties boiling-down works were started by an enterprising butcher, W. H. Mein, at Addington: he aimed chiefly at turning out soap. There were so many complaints about the smell that he moved to the district later known as Belfast. In the 'seventies he and J. McNeight Watt joined forces in the New Zealand Provision and Produce Company. Mein dropped out, but Watt carried on, and was the only man to overcome the difficulties of making boiling-down works pay. The Canterbury Meat Export Works started in business at Templeton in the late 'sixties exporting tinned meat, but their tinning was poor, and a great deal of meat had to be rejected. It was thought that tinning meat offered good prospects for Canterbury, but when the Franco-Prussian War came to an end and the demand dropped away it was realised that the tinned meat had been bought for rations for the troops and that prospects for tinned meat in peace were not as good as they expected. This company and another in South Canterbury shut their doors, and Watt was left as the only man doing any business. Belfast even in Watt's day had great advantages for a man dealing in meat and skins. It

was central, and a handy distance from Christchurch; the Main North Road ran right past it, the railway went through it in the early 'seventies; and, above all, it had an unlimited supply of pure water. These advantages, which attracted Watt, were later to impress the directors of the Canterbury Frozen Meat Company.

For New Zealand the 'seventies were a time of prosperity unexampled up to that time. As soon as the Franco-Prussian War ended, a world-wide improvement in trade began, with a steady increase till late in 1878. Vogel's policy of loans, immigration and public works, coming at the same time as world prosperity, gave New Zealand the boost she had been long awaiting. The big Canterbury rivers were bridged, the railways advanced rapidly from the north and the south, and land-hungry settlers swarmed over the Plains. Ashburton grew like a boom town in the western United States. Not only settlers wanted financing, but big squatters were asking for advances to freehold their leased land. The banks became nervous and turned off the tap of credit, and the greatest land boom known till that of 1919-20 was over. The dreary 'eighties arrived, with spurts of trade now and then, but on the whole they were a period of depression. The disastrous 'nineties were on the way—when the Bank of New Zealand had to be taken over by the Government, and reconstructed; when the Loan Company had to shut its doors for nearly a year; when Miles and Company went out of business, and when bankruptcies in Canterbury were nearly one a day.

CHAPTER II

Getting Under Way

IN NOVEMBER, 1881, John Grigg of Longbeach, John Tinline of Lyndon, and John Macfarlane of Coldstream, called a meeting of graziers and farmers to consider the floating of a company to freeze meat and dairy produce. Refrigeration was already established in America and had made a start in Australia. The two heads of the New Zealand and Australian Land Company, W. S. Davidson, the General Manager, and Thomas Brydone, Superintendent in New Zealand, had already planned to despatch from Port Chalmers the ship *Dunedin* laden with wethers killed on shore and frozen on board. The venture was not a complete success, but it was sufficient to give encouragement for further attempts. Twice the sails caught on fire from sparks from the chimney of the engine which drove the refrigerating machinery. There was difficulty with the ducts for cold air becoming blocked with snow, and the captain himself crawled down them and cleared them. Later this difficulty became only too familiar. When the ship arrived at the Port of London the captain looked overstrained and worried, but the cargo was in fair order.

As there has been some difference of opinion about who should get the credit for sending the first shipment of frozen mutton from the South Island it may here be stated that Davidson, then General Manager of the New Zealand and Australian Land Co., whose headquarters were at Edinburgh, persuaded his Board to make the venture, and himself chartered the ship and ordered the machinery. He sent directions to Brydone to obtain suitable wethers of the

highest class and to make preparations for having them killed as near as possible to the wharf at Port Chalmers. Davidson made a special trip to New Zealand to see the first shipment despatched. He and Brydone stowed the first carcass as though to demonstrate to the world their joint responsibility for the venture. He fully realised the importance of making the first cargo a successful one.

John Tinline was the owner of Lyndon, one of the largest of the Amuri stations, and a man of good education and wide experience. John Macfarlane, the owner of the rich Coldstream swamp, had made a fortune by sending a steady stream of fat bullocks to the West Coast, and he invested the proceeds to establish his sons in some of the finest hill country in North Canterbury.

The three men who called this preliminary meeting were all very well known in Canterbury and all had a large stake in the country. The meeting was called for 11 November, 1881, to be held at the office of the Canterbury A. & P. Association, and besides the three conveners, eleven others attended. They were H. P. Murray-Aynsley (owner of Mt. Hutt Station and a director of the New Zealand Shipping Company), J. D. Enys (of Castle Hill), G. Hart (of Winchmore), D. Gordon Holmes (of Holmeslea, and Mt. Harding, Methven), J. Cooke (Canterbury Manager of N.Z. Loan and Mercantile Agency Co.), Richard Westenra (part owner of Camla), E. S. Harley (Produce Manager for Loan Company), J. McArthur (St. James Station), A. M. Clarke (Manager St. Helens and later Manager for the Bank of New Zealand of its properties), The Hon. Matthew Holmes (of Awamoa and other Otago Stations), and The Hon. E. Richardson (of Glentui, Wharfedale and Albury). Although there were only 14 men present, among them they controlled something like 300,000 sheep. After John Grigg had been elected chairman, he addressed the meeting. He pointed out that Canterbury's sheep population had increased by 37,000 in the previous year and that therefore there would be no trouble over a shortage of stock to keep a freezing works busy. He predicted that soon the light land of Canterbury would be exhausted by over-cropping, and the owners would be forced to re-stock with sheep.

Auckland, Napier and Otago were all considering freezing works, he said, and Canterbury, the greatest producer of fat stock in New Zealand, could not afford to be left behind.

He moved "that having in view the larger quantities of beef, mutton, butter, cheese, etc., that are produced in the district of Canterbury for which no market can be found, and the enormous extent to which quantity could be raised were facilities offered for export, this meeting is of opinion that it is desirable to form a company to undertake the freezing, export and selling in England of beef, mutton, butter, cheese, etc."

The motion, seconded by Mr. Enys, was carried unanimously.

Mr. Richard Westenra moved the formation of a Committee to collect information and to report to a meeting to be called in December. The names of John Studholme, George Gould and Robert Wilkin were added to those at the meeting to co-operate.

The Hon. Matthew Holmes spoke of progress in Otago and prophesied "that if anything really great is to be done, it will take, not two or three companies with two or three freezing machines, but twenty machines and twenty companies".

The meeting appointed Frederick Waymouth, a Christchurch accountant, who kept the Longbeach books, as interim secretary.

John Grigg was asked to go to Port Chalmers and get all available information about the freezing of the cargo of mutton then being planned for the ship *Dunedin*. This was to be frozen on board.

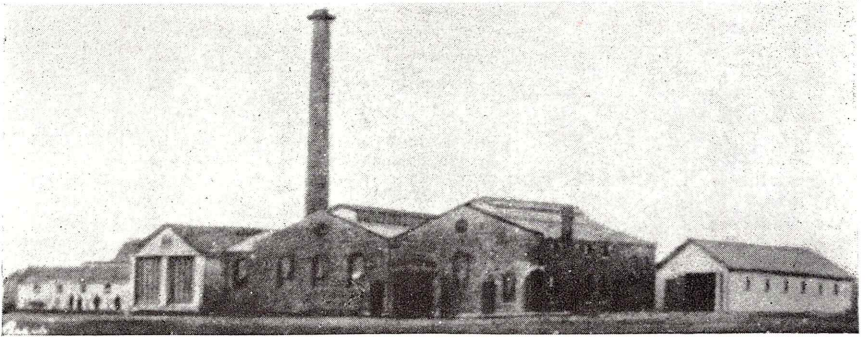
When the adjourned meeting was held on 21 December, 1881, he presented a report from the investigating committee which will be found in the appendix.

— This report and a proposed prospectus were adopted unanimously.

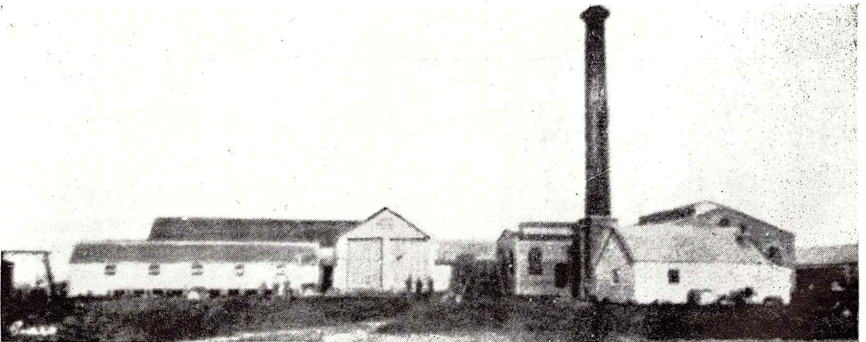
The prospectus proposed a company with a capital of £20,000, in 2,000 shares of £10 each, and stated: "The present intention of the promoters is to restrict the Company's operations to the preparation of meat and dairy produce for shipment on owner's account and to arrange for the sale thereof on the London market." The right was reserved to the Company, however, to purchase on its own account. Grigg explained that London insurance houses had



JOHN GRIGG
Chairman of the Board, 1882-1900



THE BELFAST WORKS, 1883



THE BELFAST WORKS, 1885, *after the first extensions. The brick portion is still in use*

joined together to cover frozen meat at 5 per cent, this being an absolute guarantee against loss by deterioration or otherwise.

The question whether it was better to kill stock at paddocks and cart them to the works, or to drive the stock to the works and kill there, was discussed, but there was no hesitation as to killing at a central works being the better course. It was agreed that grading was essential.

Nothing more was ever heard of the proposal that the company should engage in the freezing of dairy produce. Probably freezing butter in a building where meat and manure were being dealt with would never have been possible.

Confidence was expressed that the enterprise would be successful and profitable.

At the meeting held in December, the report was adopted. John Grigg, William Chrystall, J. T. Ford, John Cooke and Frederick Banks were elected directors. At the first meeting of directors held on 15 March, 1882, John Grigg was elected Chairman, and the Board then decided to order immediately a Haslam patent refrigerating machine, capable of delivering 40,000 cubic feet per hour of air at a temperature of 40 degrees below freezing point. It was also decided to advertise for offers of a suitable site for the works. That the directors made a correct choice in deciding on the Haslam machine was soon seen, when in a few years the Haslam Company gained an overwhelming lead on other companies in the same line of business. It became, of course, a very big thing, for not only were works being built in every country in the world which had produce to export, but every ship carrying such produce had to be equipped. The Haslam Company became in the end so powerful that it combined with the shipping companies in offering strong opposition to the freezing company's request for lower rates of freight.

From the time when the Company was incorporated on 15 March, 1882, until the date when slaughtering and freezing started, only ten months elapsed. This seems a very remarkable achievement considering that nothing was known directly by any member of the board of the business of freezing. Each member of the board

took on some important part of the preliminary steps, either by way of visiting Dunedin and seeing what was being done there, or by visiting one of the numerous sites offered to the Company in response to its advertisement.

The advertisement asking for suitable sites produced an embarrassing number of offers. These were eventually reduced to two, one of which was the old Canterbury Meat Export Company Works and land in the neighbourhood of Templeton, later the site of the Islington Freezing Works. When that Company had been liquidated, J. T. Ford had bought the works and land for £3,000. His price was £5,500 and the board no doubt did very much better by starting with a clean sheet and buying the 35 acres offered at Belfast, at £40 an acre, from the N.Z. Loan and Mercantile Agency Company.

Readers may wonder how a board completely ignorant of freezing works, and with no local architects knowing any more, set about getting plans drawn and tenders called. The answer is that the Haslam Company had an expert named Coxon, who had already installed Haslam machinery in various parts of the world, and who certainly knew as much about the lay-out of a freezing works as anyone. He came out immediately, and the buildings were planned and laid out in accordance with his recommendations. He stayed in New Zealand for some time, helped the C.F.M. Company with further building, and performed the same office for various other new companies which had ordered Haslam machinery. He inspected the Meat Export Company's buildings, and on his recommendation an offer of £2,500 was made. This was rejected, and the directors then decided on the Belfast site.

The outstanding advantages of the Belfast site have already been pointed out. In particular, the supply of an unlimited quantity of pure cold water was guaranteed by a nest of beautiful springs of considerable size which together form the headwaters of the Kaputone Creek. In 1922, the company bought Springrove, the property of William Nicholls, where these springs rise. This purchase was made so that the works water supply should be protected against falling into other hands.

Belfast, which up to that time was hardly even a name (the whole of that country being included in the general name of Styx), began to be a place of some importance. Watt's Provision and General Produce Company was already there, not far from the C.F.M. Company. Johns's farm, already well known, was just across the road, and T. C. Moorhouse, a brother of the Superintendent, had a manure works nearby. William Nicholls was at Belfast looking after the fellmongery side of Watt's business.

The plans for the freezing works provided for buildings for slaughtering, engine and boiler house, freezing, storing, etc., for a manager's cottage of six rooms, engineer's cottage, an office, a two-stall stable with loose box or traphouse, a house with long kitchen, and dining and sleeping accommodation for 12 men. James Goss's tender of £6,179 was accepted. The main refrigeration plant cost £2,655, and, of course, an engine and boiler had to be bought. A small 7,000 feet refrigerating machine, costing £645, was bought as an auxiliary, and as it stood at 28 February, 1883, the total cost of land, machinery and plant was £14,992.

The New Zealand Shipping Company agreed to supply space for frozen meat, and an advertisement appeared in the newspapers asking for applications for stock for killing. The total applied for amounted to 19,950, and as this quantity was double the number that could be accommodated, all the applications were halved. The numbers finally allotted and names of the applicants were as follows:—John Grigg 5,150, J. Haydon 100, J. Hurst 100, J. C. Wilson 150, Dudley and Northey 250, R. Chapman 100, J. Deans 250, T. B. Howson 50, E. Elworthy 250, J. Gough 150, J. Studholme 250, J. & K. Inwood 50, J. K. C. Graham 150, H. Overton 100, R. H. Rhodes Jnr. 250, P. Cunningham 150, J. Cooke 1,000, Hay Bros. 150, D. Cameron 200, R. Patton 150, W. Chrystall 150, J. Ruddenklau 75, J. T. Matson 125, Campbell & Co. 250, client unnamed 150; total 9,975. It will be seen that John Grigg had a great many more prime sheep than anyone else. He also had a great deal more confidence in the future of refrigeration than anyone else, and was willing to back his belief.

Applications for a manager at £182 per annum were called. The tender for the railway siding, including a bridge, for £697 was accepted. Shares did not sell very freely. But prices for New Zealand produce had been falling for four years, and the banks had restricted credit severely. People had lost money in boiling-down works, and the farming community is proverbially conservative when asked to subscribe to any new idea. The 'eighties were depression years and money was scarce.

Many years after, Waymouth in a speech described his struggles to place the last £1,000 worth of shares. When he was at his wits' end Henry Chamberlain came to his rescue and took up the balance, which he distributed among his friends.

By the time the first annual meeting was due, the steamer *British King* was half loaded.

A few words are necessary to introduce the members of the Board.

John Grigg had sold the family farm in Cornwall and settled at Otahuhu, where he became known all over New Zealand for his success in raising a high-class stud flock of Lincolns. This farm was only leased—a curtain raiser, in fact, for the main effort of his life. He had looked about in New Zealand before he, in partnership with his brother-in-law, Thomas Russell, an Auckland financier, took up Longbeach. He evidently felt conscious of great powers, and the task of breaking in Longbeach and making it into a farm appealed to his imagination, and was certainly enough to test him. The task of launching the C.F.M. was in its way as demanding as that of making Longbeach a world-famous farm. They both required qualities with which he was endowed far above the ordinary—courage, foresight, imagination; and his personality was so powerful that no-one could stand against him. How he managed to cram everything into his active life, it is hard to say. The board met twice a month, and he rarely missed a meeting. He had to drive from Longbeach and catch what was, in those days, a very slow train to Christchurch, and of course, there were innumerable other calls on his time from the C.F.M., apart from board meetings.

William Chrystall, who was the director who took the chair

when John Grigg was absent, was an experienced Scottish business man, who came out to take charge of a firm called Mathesons which dealt with farmers and financed them: when the firm decided to withdraw from New Zealand, he stayed here and carried on the same type of business. He was a man greatly relied on—a trustee of the Presbyterian Church, and president of the Y.M.C.A. When his turn came to be chairman of the Canterbury Chamber of Commerce, and he delivered his annual address, one of the newspapers was so impressed that it wrote: "Mr. Chrystall is always a man of information and brains. His address rises to the level of statesmanship".

John Cooke was Canterbury manager of the Loan & Mercantile Association. He must have been a very able man, and when the Christchurch Meat Company was ready to start operations in 1888, he was tempted by what must have been a high salary to join them as general manager. He did not stay there very long, but was tempted away again to take over one of the chief branches in Australia of the Loan Company. He soon emerged as one of the leading figures in the refrigerating industry of Australia, and became himself an owner of freezing works. He represented Australia in the first world conference of the refrigerating industry. He was a brother of Dr. Cooke of Lincoln.

J. T. Ford was known all over Canterbury, partly because of his wide knowledge of all kinds of farming, and partly because of his handiness with his fists. He had leased Samuel Bealey's Haldon station for five years. He managed for various owners as well. For ten years he was in partnership with Charles Newton as auctioneers, land agents, etc. Then he joined Miles and Co., a famous firm of stock and station agents, and stayed with them till they had to close their doors in the 'nineties. His experience could hardly have been wider.

Frederick Banks had come across from Australia in the 'fifties to establish a branch of the mercantile firm of Miles and Co. He was one of the heads of Miles and Co. till his death in 'ninety-four. However, Banks retired from the board of the C.F.M. after the

first year of his directorship, and so is not as important for present purposes as his successor, Samuel Garforth, who, after trying his luck in the goldfields, became a well-known West Coast cattle dealer and finally farmed a beautiful property at Spreydon. He was in his time a president of the Canterbury Agricultural & Pastoral Association, a director of Addington Saleyards, a committee man of the Canterbury Jockey Club, a famous breeder of cattle and fattener of bullocks, the owner of a first-class Southdown stud, and a very shrewd man.

A telephone connection between Belfast and Christchurch was installed very early, and came in handy in the big fire of 1888. A telephone exchange with 30 subscribers had been set up in Christchurch in October, 1881. In those days anyone who wanted a telephone went to Meddings, who was in charge of the Canterbury telegraph service. He made up the instruments himself, and the connecting wire was installed by the hopeful applicant. The early lines connected up town offices with their works or store. When enough of these had been installed, an exchange was organised; then the doctors came in, and finally the Post Office took it over. When, in 1884, it was decided to have electric light installed in the freezing works, Meddings was entrusted with the work.

Frederick Waymouth, the first secretary of the company, was a trained accountant, and had been keeping the Longbeach books for John Grigg. This led to his connection with the C.F.M. He was a man of strong personality, and was an important figure in Christchurch. He was a mayor of St. Albans, Chairman of the Lyttelton Harbour Board for several years, president of the Canterbury Chamber of Commerce, and a member of the Domain Board. He was appointed Managing Director of the company in 1901. Waymouth had gone across to Australia for a holiday in 1880, and had visited the first freezing works there, which were just opening, and when he came back he told John Grigg all about it. He claimed thus, by starting John Grigg's mind working, to have been the originator of freezing in Canterbury.

Waymouth's ability must have made an immediate impression

on the board. His salary was quickly raised to what was a high figure for the times. By temperament he was inclined to be nervous and impatient. He was an expert manager of men and could, by tactful treatment, build up a man's idea of his own ability and thus give him self-confidence and increase his value to the company.

The first works manager was R. M. Cresswell: he was engaged at £182 per annum. He belonged to a well-known Canterbury family and had been a cattle dealer and a butcher. He was a strong Methodist. Visitors to the works in his day were always impressed by the splendid order in which they were kept.

During this time, the board was in continual contact with the New Zealand Shipping Company for space and rates of freight for the coming year. The managing director of that company, J. L. Coster, was probably the ablest man of business at that time in Christchurch. Ten years before, when local manager of the Bank of New Zealand, he had conceived and successfully launched the project of the New Zealand Shipping Company. The aim, which succeeded, was to get a share of the lucrative emigrant traffic, of which the Shaw Savill line held a monopoly. The company started with chartered ships, but soon had built for it a fleet of its own—all sailing ships of about 1,000 tons. It was considered that for an ocean voyage a sailing ship was more profitable than a steamship, and the owners of the famous China clippers evidently agreed with this view. Just at this time (1883) Coster was urging the New Zealand Shipping Company to change over to steam. William Reeves and J. T. Peacock, two members of the board, would not agree, and resigned. Coster had three things in mind—a highly-profitable mail contract, ships to sail once a fortnight, and the traffic in refrigerated produce. One of the first things John Grigg, the then chairman of the board of the C.F.M., had done was to memorialise the Government on the subject of a regular steam service to London. Here were two vigorous and able men both striving towards the same end. Coster prevailed, and the New Zealand Shipping Company made the change, chartering steamers until they were able to replace their sailing ships.

Forty-three shareholders attended the first annual meeting of the C.F.M. Coxon was directed to lay before the board plans for increasing the storage capacity by one third. It was decided that the minimum weight for sheep that the company would accept would be 54 lb. An increase of the company's capital to £50,000 was authorised. The new shares, 2,000 of £10 each, had been allotted at the rate of one for every two held to shareholders at par and offered to the public at 10s. premium and all were taken up. Premiums were appropriated to Reserve and Replacement Fund.

Tenders were called for tongues, kidneys and bruised sheep. Mein was the successful tenderer, at 1s. 7d. per dozen for tongues and 2s. per dozen for kidneys. The directors expressed their high opinion of the way the company's business had been conducted and voted Waymouth a bonus of £25 which made his salary (including the use of his office) £325.

A. M. Ollivier was appointed auditor to the company.

CHAPTER III

Killing and Loading

KILLING STARTED on Monday, 12 February, 1883—the failure of some ironwork to arrive had held up opening slightly—exactly a year after the first directors were appointed and machinery was ordered by cable from England. The number of butchers was six, with William Dixon as foreman butcher. A ballot was held to settle the order of killing, and, as was fitting, John Grigg drew No. 1 marble, which entitled him to kill 2,000. A newspaper reporter wrote that “breezes wafted over the little village of Belfast, which bid fair to be as varied, if not as penetrating, in their odours as the far-famed ones in the Continental city of Cologne”. The directors had driven out in a drag to make a final inspection of the Works. The actual building of the works had been completed in three and a half months, and no defects in planning were discovered when they came to be used.

The *British King*, a steamer of 3,559 tons, with a capacity of 10,000 carcasses, and equipped with Haslam refrigerating machinery, arrived at Lyttelton in March, 1883. She was to make the first of six sailings which were timed for alternate months, each ship carrying approximately the same quantity of frozen produce.

Sailing ships had been offered but the freight with these would have been 2½d. per lb. as against 2d. for steamships, and the extra speed of steamships was, of course, an important point in their favour. Applications for space in future sailings were pouring in, the number being 38,000 sheep and 237 oxen for the second sailing.

When the *British King's* machinery had been overhauled, and

all was ready for loading, a special goods train was ordered for Belfast for 29 March—the first train of insulated trucks to be seen in Christchurch. Loading began at break of day next morning, and the long line of carcasses started to move out of the storage chambers into the waiting trucks, where “a brawny stacker”, as described by a *Lyttelton Times* reporter, “who has the reputation of being able to stand more degrees of Fahrenheit than any other man in Canterbury, and to have a perfect genius for packing lambs in a smaller space than anybody yet known to fame”, was waiting for them.

The train left Belfast at 6.20 a.m., pulled out from Christchurch at 7.10 a.m. after having to wait for the Lyttelton line to be clear of a passenger train, and within another hour the hatch in the *British King*, leading to a capacious freezing chamber, was hauled off, and the loading of the carcasses began. Small loading cages had been built, fitting the size of the hatchway and holding twelve to fifteen carcasses at a time.

Sailors went down into the chamber to pack the lambs, and their job was an unenviable one, for though when the hatch was lifted the temperature of the chamber naturally rose, it was still 12 degrees below freezing point an hour later. The lambs came out of the trucks in excellent order. Eight trucks, containing 1,512 carcasses, were sent through by ten o'clock, the hatchway was closed, and the men awaited the remaining train-loads from the works.

As expeditiously as this first truck-load was handled, others followed. The *British King* took on in all 6,198 carcasses of mutton, loading being completed in the first week of April. Loading had continued in adverse weather which held up most normal work at the port, but train-loads of frozen meat were regularly shifted in spite of difficulties. The ship eventually sailed from Lyttelton on 8 April, 1883. It is interesting to note that in addition to the frozen mutton, she carried wool and skins, tallow, pelts, tinned meat, and a variety of other meat products and by-products.

Passengers, numbering 111, were also to benefit from the provision of refrigerated space, for fresh foodstuffs were stored in the chambers for use during the voyage.

With the departure of the *British King* it seemed that the immediate success of the frozen meat trade was assured—an assurance that was strengthened with the ship's arrival in England during May, and the disposal of its cargo at a fraction less than 7d. per lb. (mildew gathered during the voyage detracted from the full perfection of the carcasses). The faith of the founders, not only of the meat trade, but of the Canterbury Frozen Meat Company in particular, was completely vindicated, and it was not long before the Belfast works had to be enlarged.

Plans for extensions were submitted to the directors by the Haslam Company engineer, Mr. Coxon, in May of 1883, and it was decided to provide for storage of an additional 5,000 sheep. As was usual in those days, no time was lost in going ahead with the proposals, and by the annual meeting of February, 1884, the chairman was able to report that the capacity of the slaughterhouse and freezing stores had been almost doubled, and a new and improved Haslam machine erected and housed at a cost of £7,000. Additions had also been made to the detached buildings.

Capital had to be increased to meet the expansion, and 4,000 shares of £10 each were now issued, as against 2,000 only a year previously. Paid capital was now £18,516, against £7,736 in February of 1883. The property account had risen by more than £7,000 in the year.

But the chief news of the day was that 72,907 sheep had been killed and frozen at the works, and 85 cattle and 14 pigs, in addition to 4,400 sheep killed and sent to be frozen on board ship at Lyttelton. Freight contracts provided for 60,000 sheep before the end of January, 1885, there was a rebate on the freezing charge, and an effort was being made to get a reduction in freight and in London dock rates.

In July, 1883, it was decided that an extension of the Company's activities could be undertaken, in the establishment of branch works at Timaru. This is interesting in showing the way in which the minds of the board were running. Actually, of course, the Timaru Works were built by the South Canterbury Freezing Company, and then taken over by the Christchurch Meat Company, and it was twenty years before the Pareora Works were built by the C.F.M.

Shortly afterwards the Secretary's salary was raised again, to £400 a year, and the directors received a guinea for each meeting attended.

Of interest to shareholders, many of whom had subscribed capital in some doubt about the outcome of the venture, was the fact that the company had collected a gross revenue of £14,842, and that from this a net profit of £3,448 had been made. This permitted a dividend of 8 per cent, amounting to £1,100. The profit allowed the directors to make a rebate on freezing charges, for these had, unwillingly, been raised in the early part of the year.

The results of this first year of active trading were a cause for considerable satisfaction to the directors, staff, shareholders, sheep-farmers, and to the public as a whole, for they meant that a new venture had been successfully launched and that the frozen meat trade had come not only to stay, but to exert a strong influence on the economic life of the Canterbury and New Zealand community.

The second working year (1884) was another sound one, with the total of sheep and lambs killed moving up to 101,002, cattle 174 and pigs 5, with an additional 23,385 sheep killed for freezing on board ship; but difficulties were being encountered through the use of sailing ships as well as steam ships for the despatch of shipments. Refrigerating machinery on the sailing vessels was not always satisfactory, and trouble was experienced in a cargo in the *Wellington*, both at port while loading, and at sea on the way to England. A loss on this cargo and one, too, in the ship *Invercargill*, transferred the profits of the first two years into a loss for the third, no dividend being paid. The sailing ships had been chartered when the steam service was still in its infancy, and the directors had to offer long-term engagements to encourage shipowners to fit ships with the machinery necessary for carrying frozen meat.

The set-back was substantial, and the year's loss was added to by the fact that the company had to buy stock and fill shipping space at almost the highest point of the market, and to sell it in London in the summer and autumn of 1885, when supplies were heavy. Some meat, therefore, was sold at a loss, and over the whole

year, with freight charges also heavy, the company's loss reached £12,623.

There was, however, an increase of 20 per cent in stock frozen at the works, while operating costs went up by only 3 per cent—a promising indication that, given good market conditions, the trade would soon recover.

It was by now being realised that the price of 7d. per lb. could not be regarded as a normal price. For some years to come 4d. to 5½d. was all that could be realised on the London market, and all efforts had to be directed to reducing the costs of landing the meat in the United Kingdom.

The fifth year of the Company and the fourth of actual trading saw a rise of 42½ per cent in meat frozen, with a rise of only 21 per cent in costs. As was to be expected, the larger amount of stock handled had resulted in a much lower "per head" cost. But farmers were still backward in sending in stock to the works, and the reason was not far to seek. Though the company as a processor of stock had made a respectable profit, the results to sheepfarmers had been usually disappointing and sometimes disastrous.

News from the United Kingdom now indicated that the Canterbury company's policy of watching grading with great care was bearing fruit. Canterbury mutton was earning pride of place in the English market, and the distribution of meat was widening in England. Low prices still prevailed there, but handling charges were being reduced, and the industry was progressing favourably.

The Canterbury company was only one of several engaged in or contemplating engagement in the freezing business, but it can be said that the quality of the Canterbury output—both of the stock itself and of the carcasses after killing and freezing—was inspiring widespread appreciation. New Zealand meat was one thing in England, but Canterbury meat was something even better, and consumers soon began to seek out Canterbury lamb in preference to that sent from any other part of the Dominion.

Registration of the company's brand in New Zealand and in England was, in fact, decided upon early in 1889. In September,

1889, the C.F.M. Co. applied for an injunction to restrain the Christchurch Meat Company from using the brand "North Canterbury" on its meat. It was argued that the C.F.M. had used this brand for the last two and a half years and that it had established its meat and grading as superior to any other frozen meat entering England. Cresswell had from the beginning been very careful about grading. Judge Denniston granted the injunction.

CHAPTER IV

Damage from Fire

THE COMPANY received a severe shock in the partial destruction of its works by fire on 1 December, 1888. Early in the morning of that day, fire broke out at the works and caused many thousands of pounds of damage before it was suppressed. Flames were first noticed by J. Huston, the engineer who was in charge of the engine-room at the time. Taking a look round to see that all was safe, he discovered the fire in the eaves of a store, where alterations had been going on, but where no workmen had been engaged for more than a week.

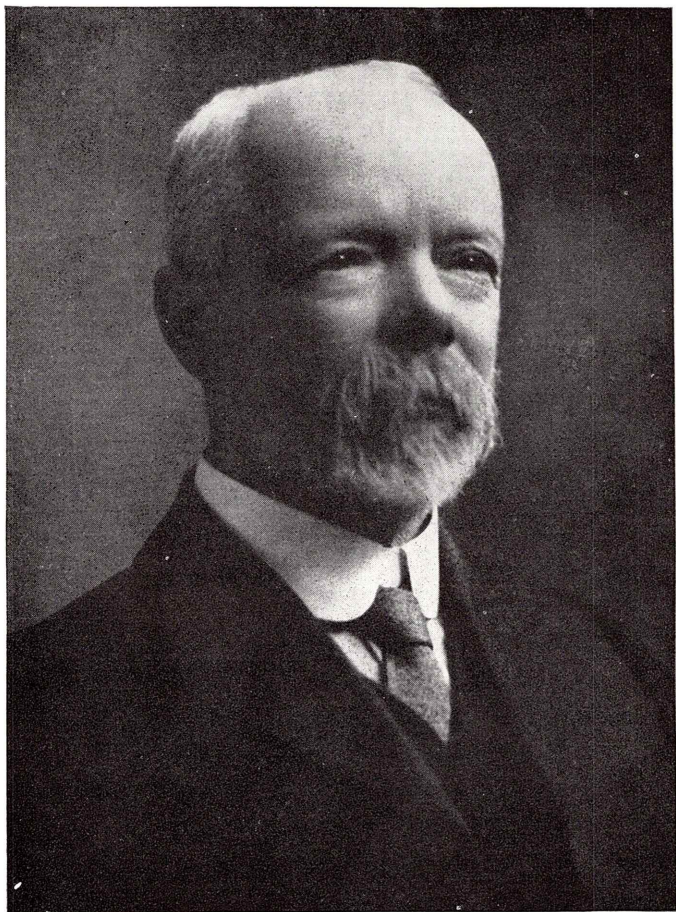
This was half an hour after midnight. From the western side of the buildings, the flames spread rapidly eastwards to the railway sheds. One building containing three stores and three new freezing rooms, and another containing three freezing rooms and one very large store, were destroyed. An old cooling room had the roof damaged, but the brick engine room escaped. Carcases to the number of 6,600 were damaged, for the stores were preparing for a big shipment to England in the *Ionic*. Damage in all was estimated at approximately £14,500.

A peculiar feature of this fire was that it broke out where no-one had been working for some time, but probably the cause was that wool used for packing the storage room door had become heated under pressure and had smouldered into ignition. Brick walls protected the machinery rooms from the wooden buildings that were destroyed, or the damage would have been much greater, with operations indefinitely interrupted.

Fire was an even greater menace sixty years ago than it is to-day, for the time taken for fire-fighting engines to reach the scene was much longer. Mr. Cresswell, the works manager, put a telephone call from Belfast to Christchurch at 12.45 a.m., but the Superintendent of the Christchurch Brigade, Mr. Turton, had first to get permission from a city councillor possessed of the necessary authority before he could take an engine and men beyond the town belts. One o'clock in the morning, therefore, found the Superintendent chasing through Christchurch streets trying to find the Mayor. This he was unable to do, but subsequently discovered the chairman of the Fire Brigade Committee, and was able to get under way at 1.45 a.m. The engine, drawn by horses, did not reach Belfast for another half-hour, by which time much property that might otherwise have been saved had been destroyed. A Railways Department engine, called later to the scene, was taken by rail and went into action soon after three o'clock. This engine, however, was being used only twenty-five minutes after its superintendent had been awakened and told of the outbreak.

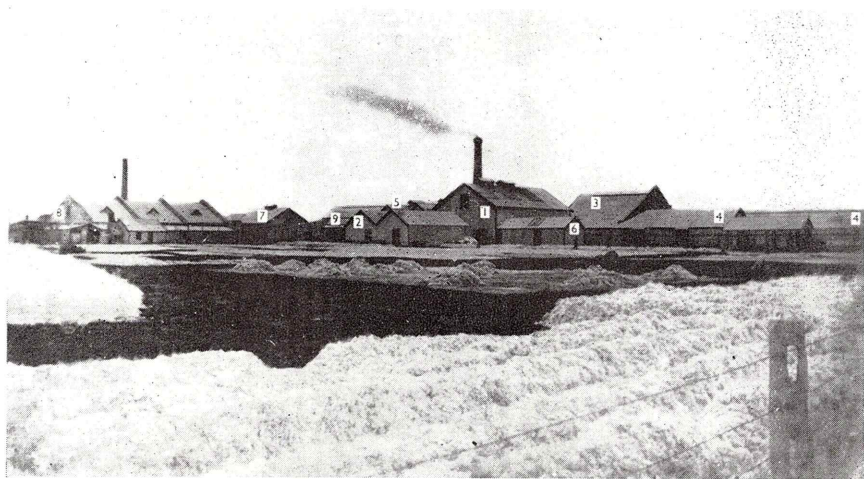
The delays in fighting the fire roused considerable comment in Christchurch at the time, the *Lyttelton Times* stating in an editorial that the loss of property was large and needless. "The spectacle of Mr. Turton hunting in the small hours for somebody to give him leave to save one of the most valuable properties in the district from destruction", stated the article, "is one that might amuse in a comedy but is anything but comical when introduced on the stage of everyday life . . . and while Superintendent Turton was hunting for authority, Superintendent Ashley (of the Railway Fire Brigade) had not been awakened". The paper estimated that had the railway brigade been roused at the start, damage might have been stopped at £2,000.

A sequel to the fire, which eventually was brought under control soon after 7 a.m. and was carefully watched for the rest of the day, was an auction sale of damaged stock on the Monday, when some 150 persons—most of them in the meat trade—travelled to Belfast

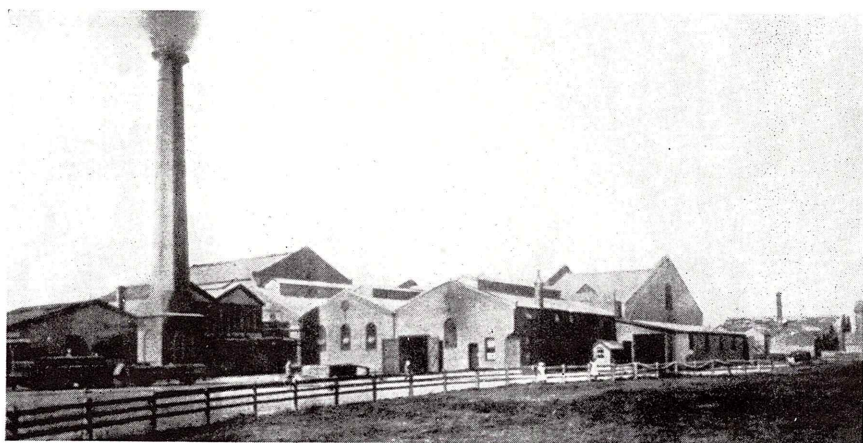


FREDERICK WAYMOUTH

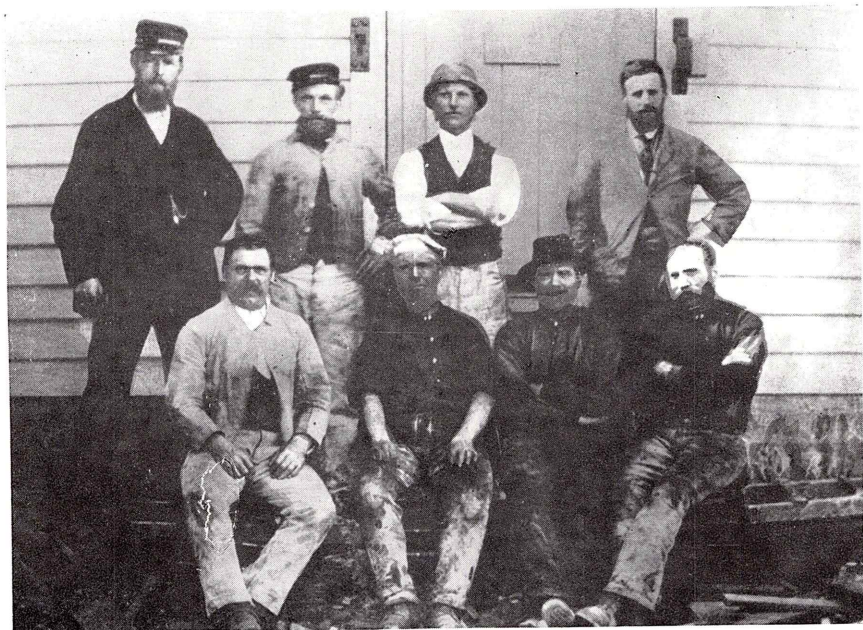
Secretary, 1882-1901. Managing Director 1901-1909



THE BELFAST WORKS IN 1895. 1 *Tallow Refinery*; 2 *Tallow storage*; 3 *Manure works*; 4 *Wool and Pelt Departments*; 5 *Preserving-house*; 6 *Tin and blocking-room*; 7 *Cooling-room*; 8 *Freezing and storage chamber*; 9 *Slaughter-house*; 10 *Slupe wool spread in the sun to dry*



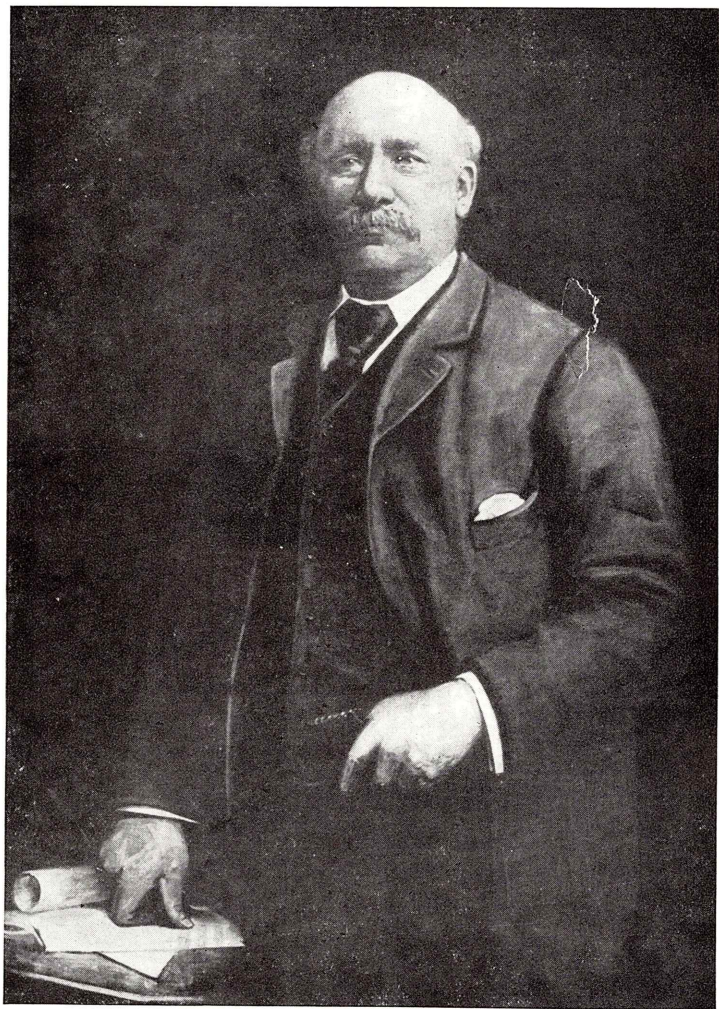
THE BELFAST WORKS, 1900



EARLY ENGINEERING STAFF. *Back row:* Mouat (engineer), G. Pateman (locomotive driver), —, —; *Front row:* Bob Lindsay (head fitter), Barney Crossen (fireman), —, Donald McIntosh.



WHEN PAREORA WAS UNDER CONSTRUCTION. *Left to right:* W. Chynoweth, R. Horwell, W. Clark, W. Watkins.



WILLIAM CHRYSTALL
Chairman, 1900-1901

and bought carcasses for anything up to 5s. each. Nearly all of them finished at the boiling-down works.

Debris was being cleared away while the auction was going on, the company's architect was drawing plans for renovations, and the stage was set for a quick return to normal output.

An official enquiry into the fire subsequently found that it was purely accidental, that presumably it had started in a roof of a store room and that no blame was attachable to any employee.

It says much for the solidity of an eight-year-old concern that in spite of the dislocation caused by a major fire, the 1888-89 season was again a record year for output. Sheep and lambs killed and frozen totalled 244,352, cattle 714, and another 18,707 carcasses were frozen on board vessels at Lyttelton. And in spite of the fire, the company was also able to show a credit in profit and loss account of £1,838 at the end of the year, thanks to the vigorous policy of depreciation pursued previously. Shareholders received a dividend of 7 per cent, and in less than three months after the fire, a contract had been let to Mr. Dan Reese for new freezing rooms and stores, the work to be done in concrete, brick, iron and durable timber.

When the rebuilding was completed the works could put through 1,500 carcasses a day as compared with 1,050 before. In 1883 they had started at 300 a day. There was also storage for 26,000.

A separate building was used for converting fat into marketable tallow. This is the first mention of a by-product.

When the rebuilt works were opened a first-class lunch in one of the freezing rooms not in use was provided. Naturally, frozen meat took a principal place on the menu. Among those present were Sir John Hall, J. T. Peacock, J. Ferguson (Chairman A. & P. Assn.), F. Banks, W. B. Perceval—later Agent-General in London, H. P. Murray-Aynsley, G. G. Stead and Joseph Gould.

The insurance company paid £10,500, to which was added the proceeds of salvage, and this was considered highly satisfactory by the Board. Nevertheless the Board ordered the best portable fire-engine obtainable.

Sir John Hall at the Annual General Meeting, March, 1888,

declared that all charges against meat shipped from Sydney to London were included in the sum of $1\frac{3}{4}$ d. Directors did not believe him. But they hoped to get their figure down to 2d. in the near foreseeable future.

At this time profit to fatteners had risen to better than could be obtained by selling locally. A wether of 60-70 lb. could give them 8s. to 10s. It could be said that freezing could give the fatterer a return of double the amount in half the time—for without freezing, and with only boiling down to rely on, he would have to keep the wether to 8-tooth.

A special general meeting was called in June, 1888, to authorise the Board to call for guarantees of stock up to 180,000 carcasses. This was to enable the Board to make forward freight contracts at the rate of 1d. per lb. John Grigg announced that his arrangements with the Tyser Line had had the effect of reducing freights to this reasonable rate. This was rather optimistic. 1d. freight was some way off but he made a favourable contract.

John Cooke retired from the Board in 1888. He had been persuaded to join the C.M.C. as general manager. John Deans took his place on the Board.

CHAPTER V

The Problem of Costs

ALTHOUGH TECHNICAL PROBLEMS were being overcome, other much more serious troubles were to arise, and were to cause extreme worry to the directors for years to come. These can be grouped under the two heads of:—

1. Costs from Belfast to Smithfield.
2. Difficulties of sale and distribution in England.

In discussing these two heads it must be realised how low the average selling price was in England for years to come. The *British King's* cargo sold at 7d., but that price was very seldom touched again. An average price of 5d. year in year out would probably be rather above than below what was received. More than 20 years later when the price rose from 5d. to a fraction over 6d. it was considered an unheard-of thing. There were many bad times, when meat averaged only a little over 3d. Therefore there was little margin, and farthings had to be carefully considered.

Costs started directly the train left Belfast. The rate for frozen meat to Lyttelton had to bear its share of the high tunnel rate. For many years deputations told the Minister of Railways that he was killing the goose that laid the golden eggs. They were met with the deepest sympathy outwardly, and inwardly with the firmest determination to continue to extract the utmost penny where no competition was possible. Loading costs were nothing like what they later became, but freights were high, and the New Zealand Shipping Company, originally formed to break the Shaw Savill

monopoly which had been exacting such high rates from New Zealand, joined with its old enemy and held out long and stubbornly. Things of course were not altogether easy for the New Zealand Shipping Company. They had to replace the whole of their line of 1,000-ton sailing ships with larger and faster steam vessels equipped with refrigerating machinery. Their greatest trouble was to get outward freights for their ships in these times of depression. The profitable emigrant traffic had dropped to low ebb. John Grigg was able to make a contract with the Tyser line which helped to break down the resistance, and the charge for freight did gradually drop by a farthing or an eighth of a penny, until, twenty years after the works opened, freight rates for the first time fell below 1d. Freights were not nearly the end of the trouble. Insurance was another cost, but with the improvement of machinery, cargoes travelled better, and rates were reduced. Costs in London between the ship's side and Smithfield were nearly a penny for some time, and the meat was often badly handled and allowed to get soft while carcasses were being sorted into lots. Refrigerated storage was scarce and expensive in London. The C.F.M., owing to its system of living purely on its freezing charge, had many small lots, and these had to be sorted out during the process of unloading. Visitors were horrified when they saw the London dock labourers tramping over the carcasses while the open hatches allowed the temperature to rise and the carcasses to soften.

For the first year's working the freezing rate was $\frac{3}{4}$ d. per lb., and of this $\frac{1}{8}$ d. was later returned to farmers. They consigned to various agents in London. Fitter and Weddell were well-known names even in those days. There was no control and no central organisation at the London end. Numerous small lots caused annoying delay in sorting, and the meat was liable to get soft and get badly knocked about; owing to there being practically no refrigerated storage, the meat had to be hurried to Smithfield as fast as it could be unloaded and sorted. The agents and Smithfield stallholders dealt much more largely in home-grown meat than in Colonial frozen meat, and it was not to their interest to canvass for

the Colonies. Actually, when the first frozen meat started to arrive, there was not only intense prejudice—there was organised and long continued opposition. The landed interest—perhaps the strongest vested interest in England—from Parliament, from the landlords, from the tenants, raised its voice against the new competitor which was landing meat in quantities which were bound to be increased. And much of the meat which was arriving lent support to the allegations of poor quality. South American meat was coarse and low-grade, and the same could be said of the North Island meat, which was largely strong-woolled wether mutton. Australian merino wether mutton, however good it might taste, certainly wasn't much to look at. A representation of a frozen carcase was carried through London in the Lord Mayor's Show with a jeering placard affixed to it. Good Canterbury Lamb was probably even further ahead of the world at that time than it was later on.

A steady stream of New Zealanders returning from visits to England agreed in condemning the methods of unloading, the lack of system, the lack of refrigerated storage. During the early years, many consignments left a debit balance to be made up by the shippers. Freight was 2d. per lb., and charges from the ship's hold to Smithfield nearly another penny; six shillings a head was considered a good return.

The figures given below make clear the prices farmers could expect in the late 1880's, and explains why, when the company called on clients for stock to fill a ship, the response was poor:—

<i>Year</i>				<i>Per lb. Average</i>
1885	-	-	-	5¼d.
1886	-	-	-	5d.
1887	-	-	-	4¼d.
1888	-	-	-	4½d.

Home-grown was sold during the above period at from 10d. to 13d. At this time, England was importing 10-15 per cent of its meat from abroad—either dead or alive. Of this 20 per cent was frozen, and of the frozen meat half came from New Zealand. The rest came

from Australia and South America. Many ship-loads of cattle on the hoof crossed the Atlantic, and many live cattle were shipped from Ireland.

Nothing much could be done about the prices realised at Smithfield. Many people thought that meat should be shipped to North of England ports, but the trade to the North was in cheap low-grade meat and South America, whose meat trade, even then, was highly organised and centralised, had already taken possession of that market. The following further figures, taken at random from parcels shipped, give a clear idea of the steady improvement of the ratio of costs to prices:—

<i>Year</i>	<i>Parcel</i>	<i>London Price</i>	<i>London Charges</i>	<i>All Other Charges</i>	<i>Net Return to Consignors</i>
1884	1,800 wethers	5½d.	.82d.	3¾d.	1d. per lb.
1888	2,343 lambs	6.17d.	½d.	2¾d.	3d. per lb.
			Total Charges		
1893	2,063 lambs	5.45d.		2d.	3.45d. per lb.
1898	3,642 lambs	4¾d.		1.64d.	2.61d. per lb.

In 1900 the consolidated rate for freezing, bagging and freight was 1.1d. mutton and 1.2d. lamb.

The uncertainty which faced the directors of firms engaged in the export meat trade in the early 'eighties is illustrated by the first concern to bear the name of "Christchurch Meat Company", which was registered in 1883. The chairman was W. Devenish Meares, and the other directors were John Deans, H. P. Lance, H. Overton, C. J. Harper and the Hon. W. S. Peter, with Thomas Acland as secretary. At the annual meeting of this company in 1885 the chairman stressed the uncertainty of the meat market, and the necessity for caution before works were built. At the end of the year it was decided that the company should go into voluntary liquidation. This firm had no connection with the later company which used the same name.

A meeting was convened by George H. Clifford (later Sir George), and W. S. Peter in November, 1884, to consider this

unsatisfactory state of affairs. They had both recently been in London, and were both vitally interested in the disposal of New Zealand mutton and lamb, Clifford, as owner of Stonyhurst and supervisor of Flaxbourne, and Peter as owner of Anama. J. C. Wason was voted to the chair. Peter Cunningham, who had made a fortune by shipping wheat from New Zealand suggested that there should be a central depot for receiving and distributing meat. Clifford said that he, Studholme and Rich had been appointed a committee to look into the matter. Rates of freight and charges from ship to market were killing the trade. The dock refrigerated stores—such as there were—charged for storage at a very high rate. Nelson, already a well-known figure in the meat world in New Zealand, owner of big freezing works in Napier and a large shipper of meat to London, said he had been forced to set up his own depot for receiving and holding his frozen meat when it reached London. This was a refrigerated store built under the arches of the Cannon Street Railway Bridge, and he could hold meat there till a suitable time came to put it on the market. He considered that he made a saving of 50 per cent in the ship to market charges, and was able to offer his meat at a selected moment.

Another complaint was that all imported meat was jumbled together under the name "Colonial" or, what was even worse, as soon as New Zealand meat began to make a name for itself, Argentine and Australian meat was offered as New Zealand meat. It was said, and no doubt with truth, that London butchers bought the best-class New Zealand carcasses and sold them as home grown. It was said also that stallholders of Smithfield were London butchers as well, and could manipulate prices to suit their own interests. The result was that the pick of the frozen meat was bought at an unfairly low price and sold at an unfairly high price as home grown: and at the same time the apparent general average of the imported meat was lowered by the withdrawal of the top grade.

Later Nelson made an offer to the C.F.M. Board to make available his London depot to them at a proportionate charge. George Clifford urged the directors to accept the offer, but they refused,

for what seem inadequate reasons. Nelson's offer was to sell at $\frac{1}{2}$ d. per lb. commission, which would include all charges.

The meeting closed by forming a committee of those before-mentioned, with the addition of Hon. E. W. Parker (Dalgety & Co.), W. Acton-Adams and H. P. Lance.

In the year 1885 a conference of representatives of all New Zealand meat companies met in Christchurch to consider various matters of vital importance to the trade, but principally rates of freight. They bound themselves to refuse to pay a higher rate than $1\frac{1}{2}$ d. per lb. The names of those attending are given below as a matter of interest and as showing the freezing works set-up in New Zealand at this date:—

N.Z. Refrigerating Co. (Otago)	J. Roberts, H. C. Begg
Southland Freezing Co.	W. Carswell, G. Nicholls
*South Canterbury	Edward Elworthy, Thomas Acton
*Christchurch Meat Co.	John Deans, Hon. W. S. Peter
Canterbury Frozen Meat Co.	John Grigg, Wm. Chrystall
Wellington Meat Export Co.	W. Dodds, W. Booth
Wellington Meat Preserving and Freezing Co.	F. Krull —
Nelson Bros., Napier	Wm. Nelson —
Frozen Meat and Storage Co., Auckland	F. Batley —

* These companies had not yet built works.

In March, 1885, Waymouth's salary was increased to £500, with a bonus of £100. As works manager R. M. Cresswell had proved very successful. After being offered in May, 1884, a five years' engagement at £260 for the first year and £280 for the second, his salary was further increased in 1885 to £300, with another two years' engagement. That year the annual report gave him most of the credit for the year's success.

Cresswell left the Company in July, 1890. He and Waymouth had had differences, and Cresswell's sons had taken it up as a family feud. The eldest of them was employed in the works. One day when Waymouth was expected at the works, the boys waylaid him and beat him up. This led to an action for assault, and the

fining of the ringleader. The fine was promptly subscribed in the body of the court. But, of course, it meant the end of Cresswell's employment by the Company. He went to the North Island and found employment with Nelson there, and maintained his high reputation in the refrigeration industry.

W. B. Scott, the engineer, whose salary was £250 a year, left in 1885, being replaced for a brief period by W. H. Mouatt. In December, 1886, W. B. Glass, chief engineer of the *Te Anau*, replaced Mouatt.

The ship *Canterbury* sailed from Lyttelton on 17 January, 1885. The whole cargo of 9,019 sheep and 472 lambs was shipped by John Grigg. It was said to be the finest cargo that had been shipped to that date. The wethers averaged 70 lb.—at that time considered an ideal weight for the London market, and the lambs averaged 37 lb.

In 1885 the C.F.M. freezing charge was the lowest in New Zealand, being $\frac{1}{2}$ d. per lb. for mutton and $\frac{5}{8}$ d. for lamb with bags charged at 6d. each.

In March, 1887, it was decided to freeze and ship kidneys.

CHAPTER VI

Notes of General Interest

FLEMING OF PORT LEVY and W. H. Cooper (a butcher and later Mayor of Christchurch), suggested in September, 1889, that a company should be formed to buy, for the benefit of fatteners on the Peninsula, the freezing hulk then lying in Lyttelton Harbour. Belfast was too far away for them. Freezing figures for New Zealand had risen from 120,000 in 1883 to just over one million in 1888-9. Figures for the half-year ending 31 May, 1890, put the C.F.M. in top place with 163,500, the Wellington Meat Export Company being next with 143,361. When the new works were completed after the fire of 1888, it was found that improved methods of building and insulation would enable the Company to freeze mutton at a saving of £3,500 a year. But the contractor fell so far behind his time that the *Edwin Fox*, the freezing hulk at Lyttelton, had to be employed at considerable cost. Works for converting surplus fat into saleable tallow were also well on the way, and this was the first step towards the by-products side of the works. The board also planned a plant for tinning tongues.

In 1889 there was a big saving in freights. The New Zealand Shipping Company and the Shaw Savill & Albion Company agreed to carry lamb at 1½d. per lb. and mutton at 1¼d. The C.F.M. guaranteed to find a minimum quantity of meat.

The average price gained in 1889 was ⅔d. per lb. better than in the previous year. Dock charges and insurance had both been reduced. In 1890, with their extension and improvements, the works

were seriously under-supplied with stock, and in addition were faced with competition from Islington, which had just started operations.

The South Canterbury Freezing Company's works were offered to the C.F.M. in 1889, but the proposal was declined because of the increase in freezing charges that would have been involved. These works were later offered to Nelson Bros., and finally in 1893 an offer from the C.M.C. was accepted, and they became known as the Smithfield Works. The Belfast Bacon Curing Company was formed in July, 1890. This was a buying company formed to help farmers who had difficulty in getting what they thought was a reasonable price for their pigs. It bought their pigs and gave the farmers an advance, and had the pigs killed and cured at Belfast. The ultimate history of this company proved that the farmers' opinion of the prices they had been getting for their pigs was unrealistic, and that the buyers had been treating them fairly. The Bacon Curing Company had been paying too much, and it went out of existence.

The C.F.M. converted fat into tallow for clients free of charge, the total gain being £1,249 over local prices for fat. This amounted to a substantial rebate in freezing charges. In 1891 it had started tinning tongues and meat.

A new slaughterhouse was completed. This was one of the upstairs type with a high ramp, the overhead rail system being fully used for the first time. It enabled killing to be raised from 1,500 a day to 2,300 per day. J. C. Maddison was the architect.

Thomas Rowe, a famous pig breeder, on returning from London, reported men to be very careless when unloading ships. When they stopped for lunch, they did not replace the hatches, and a steady thaw went on. Whenever a good shipment came in the stallholders gave favoured butchers "the nod" and they picked out the best and sold them as English grown at a high price.

John Cooke gave an interview when he returned to Australia from a visit to New Zealand which made it clear that he was astonished at the advance the New Zealand Refrigerating Industry

had made—technically—in improving and standardising the product, and particularly in working up by-products and thereby almost doing away with killing charges.

Twenty-five truck-loads of good freezing sheep left Oamaru for Belfast in August, 1892. The reason was that prices were better in Christchurch and freezing charges lower. The *North Otago Times* said something would have to be done—either lower the freezing charges at Oamaru or shut up shop.

In March, 1893, the Chairman was able to announce a uniform rate of 1d. per lb. freight all round and payable in London. The fellmongering department was going strong and the Company would soon be able to deal with all offal. The shipping company had agreed to take responsibility for damage to shipments up to freight limits, with the result that meat was being landed in better condition.

Peter Cunningham had been in London in 1893, and was not satisfied with the conditions under which Canterbury meat was sold and distributed. He said there were only three firms which counted in dealing with New Zealand frozen meat—Nelson Bros., W. Weddell & Co., and H. S. Fitter & Sons. He said New Zealand freezing companies should form a committee to regulate offerings. He also said some butchers were offering third-rate English beef—cow and bull—as Colonial frozen meat.

The fellmongering side of the business was developed in 1892 under the superintendence of William Nicholls. This was the first decided step in the development of the by-products side, which was ultimately to revolutionise the industry and make possible payments to farmers which could never have been dreamed of under the older methods. The slipping system was much the same as at the present day. The skins were painted by hand with the same defoliant, subsequently being cold-water washed in “dollies”. The manufacture of manure from offal was started about the same time as fellmongering, and the old laborious and wasteful business of carting out to paddocks was done away with. John Grigg happened to own

one of the paddocks which was used for this purpose, and a shareholder accused him of enriching his land at the expense of the company's clients. He replied that he would be delighted to stop the practice when a better method of dealing with offal was discovered.

In 1892 Fitter was complaining that a good deal of frozen meat from Australia and New Zealand was arriving soft. The *Ruahine* had lately arrived with 75,000 carcasses, more than half of which were damaged. A good deal of this was from Queensland. It was a generally-held opinion that the fast mail steamers did not carry their cargo so successfully as the slower cargo steamers. This was put down to the fact that the mail contract provided penalties for every day over the set time and bonuses for every day under. It was considered that the ships' engineers starved the refrigerating machinery for steam in order to get higher speed.

In 1894 the Company was paying bonuses to officers in ships which landed their meat in condition. This produced good results. Bookings for 1894-5 were 254,000—easily a record.

At the annual meeting on 30 March, 1895, John Grigg said the Company had killed 404,478 first-class sheep, 11,022 second-class and 17,169 reject. The average weight of sheep was 58.8 lb., and of lambs 38 lb. Their standard had improved. Their slipe wool had sold very well. The Company was now realising the great value of by-products.

John Grigg said he was often asked why the Company did not have a representative in London to look after the selling end. His reply always was that the meat belonged to the farmers, and if they did not like the selling methods, it was up to them to do something about it. Once he lost his temper and cried out, "What! Are we to have some wretched hireling meddling with our affairs in London?"

This was all very well, but he must have known that if it was difficult for meat companies to get together to improve the organisation of selling in London, it was practically impossible for farmers to do so.

CHAPTER VII

Special Aspects

THE MEAT BUSINESS has always attracted individualists. In fact, it is practically the only large-scale business in New Zealand which gives scope to strong personalities to exercise their gifts of foresight, daring, imagination and strength of will. Whereas in larger countries the great industries grouped round the production of steel and other metals and oil, and the manufacture of necessary articles for large populations, have produced those almost legendary figures whose abilities have matched the problems involved, New Zealand—a small country with a small population—has only one great asset with which to fight her way into the battle of world trade—a perfect climate. Her soil is limited and only barely adequate in quality. She has no metals worth speaking of, and circumstances have made her manufactures too expensive to compete in world markets, but she can, with her equable temperature and generous rainfall, grow grass nearly all the year round. This and refrigeration have enabled the population to reach a standard of living remarkable in a country so limited.

The dairy industry, with its strong emphasis on the small producer and the simplicity of its problems of processing, has been supremely fitted for the co-operative system. Meat alone, with its demands for expensive freezing works, planning, research and intense competition, has called for those individuals usually referred to as "big business men". Each freezing works or group of freezing works in New Zealand was evolved by particular local circumstances, and was brought into production by one or two strong and decided

men. They solved their problems in their own particular way. This was the Victorian age. Socialism was not much more than a name. Christianity was of the muscular type. You went to church on Sunday and, invigorated thereby, planned how to beat your competitor on Monday morning. It has taken two world wars, international communications which have reached a very high state of efficiency, and the rapid development of democracy, to put a rather different aspect on those well-tried old veterans, supply and demand, and private enterprise. Fifty or sixty years ago there was little chance of high-powered executives in meat companies agreeing to share markets, processes, and territories which they had built up by their own blood, sweat and tears. Nowadays such problems could at any rate be looked at.

It was obvious that the various meat companies had to work out their own salvation in the ways that suited them best. In 1895, Australia and Argentina were both serious competitors and were raising their standard. In that year Belfast put through 360,000 carcasses—easily a New Zealand works record.

In the 1895 season, John Cunningham, a butcher, on the opening day of the season broke a world's record by killing and dressing 238 sheep. He worked 14 working hours. He started at 7 a.m. and finished at midnight. His spells totalled three hours.

John Holmes, a well-known Christchurch lawyer, after investigating the selling of Colonial frozen meat in London in November, 1895, complained not so much of prime New Zealand mutton being sold as English, as of poor Australian and River Plate meat being sold as New Zealand meat. W. B. Clarkson just back from a trip said the same. Holmes said the English working man had never been introduced to New Zealand frozen mutton.

In 1896, John Cooke, who had just arrived from Australia, and who had started his own works at Druilguin, New South Wales, in the interior, maintained that frozen carcasses could travel 24 hours in midsummer in Australia without damage. He was shipping mutton to Manchester and beef to Mediterranean ports—also to

Liverpool, Glasgow and Cardiff. Cooke was the only high-class meat man who considered these markets were worth while.

W. Weddell in the same year expressed an exactly opposite opinion. He said efforts to dispose of cargoes of frozen mutton in the West of England had almost completely failed, and the meat had had to be moved elsewhere.

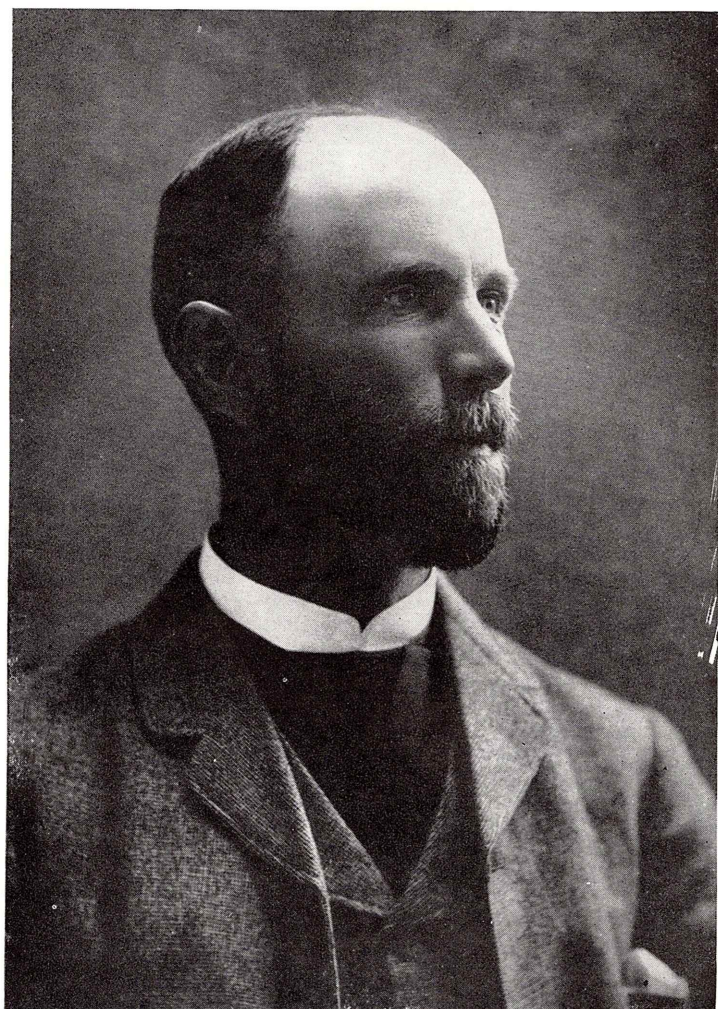
A new ammonia-type compressor was installed in 1896 by B. W. Glass, with advice from F. Goodman, the American expert.

At the annual meeting in December, 1896, John Grigg announced that owing to South American competition, the company proposed to tighten the grading slightly. They killed 3,320 in a day at Belfast—a record. Their tinned tongues were the best in the trade. They had increased their clients. Their wool classing was very successful.

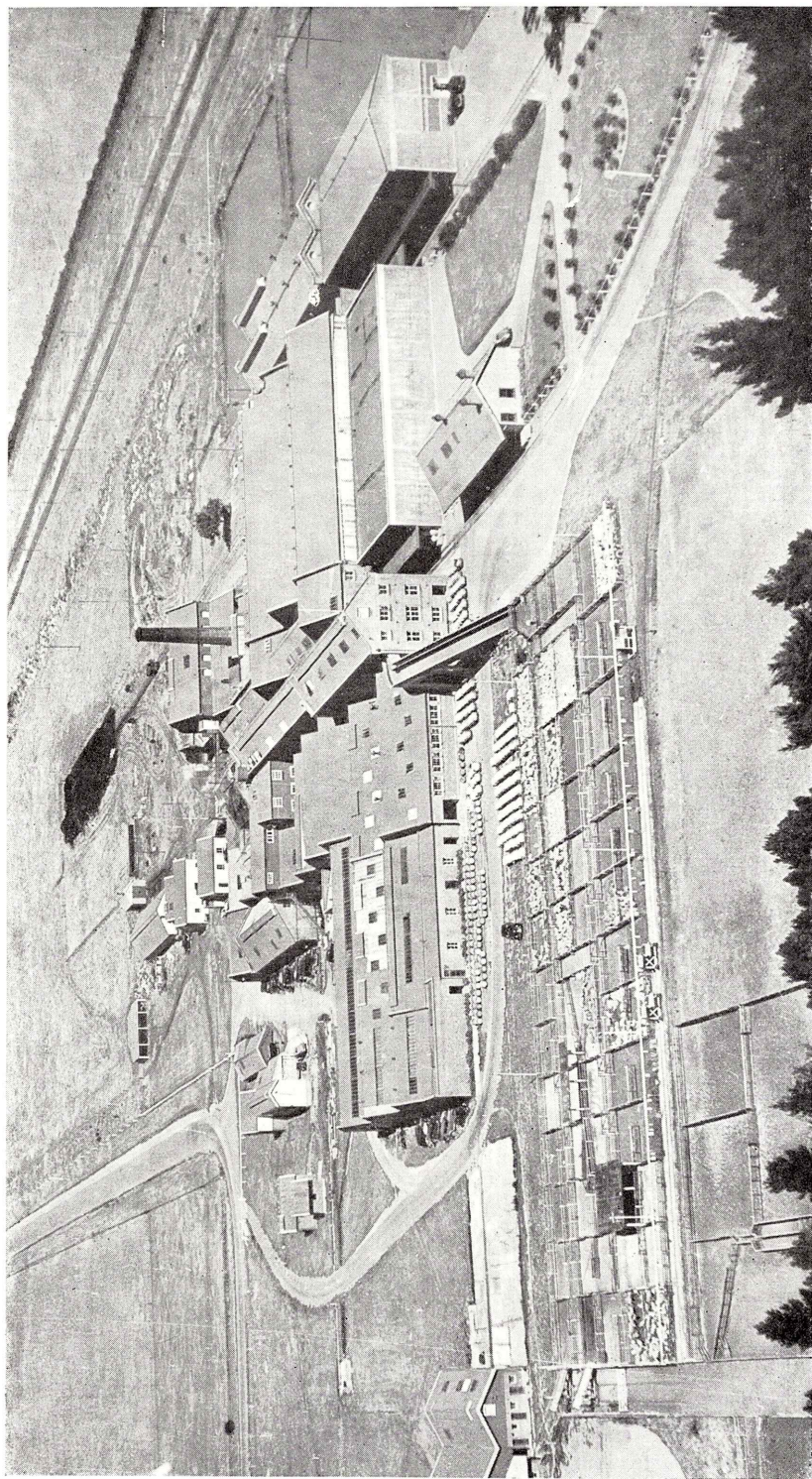
1896 was a bad year for New Zealand frozen meat. Thomas Borthwick and Weddell & Co., in their annual reports, both commented on a slackening of grading in New Zealand shipments and a tightening of grades from the River Plate and Australia. Also, damaged cargoes were becoming more frequent rather than less. Jobbers were buying big weights and passing them on before the meat got to the market, and prices were then cut before the regular agents were able to offer their quota. The annual meat consumption per head of Great Britain was 87 lb., out of which 27 lb. per head was imported. Of the imported meat only 9 lb. was frozen, the rest coming on the hoof across the Atlantic or from Ireland.

Shareholders complained at the annual meeting in December, 1896, that individual weighing of sheep had not been introduced, that sheep and lambs were not graded as to weight, and that there was too much variation in weight in some parcels. They claimed that individual weighing was being done at Islington. John Grigg promised action.

1897 was a bad year in London. There was a glut, and meat was selling at 3½d. per lb. Waymouth went to England in this year, and made progress at getting increased cold storage at the docks. He also made considerable progress with a long-term agreement with shipping companies over freights. When this agreement was



JOHN DEANS
Chairman, 1901-1902



THE FAIRFIELD WORKS. AN AERIAL VIEW, 1950

approaching the point of being signed the news broke that Gilbert Anderson had signed an agreement for a slightly higher rate on behalf of the C.M.C. This knocked the bottom out of the proposed C.F.M. agreement. John Grigg was furious. In his reference to this matter in his annual address, his mighty wrath still shakes the printed page. It must be emphasised that he was a very big man, and that when he was generous he was generous beyond the imagination of ordinary men, and that when he was angry it was like a cataclysm of nature. The earth quaked, and lesser men fled for shelter. He said Gilbert Anderson had thrown away thousands of pounds which should have belonged to the farmers of Canterbury.

In 1897 W. H. E. Wanklyn became auditor to the Company. His name appears in the records first of all in 1893, when he offered his services as extra auditor. John Grigg moved that he take the place of the two auditors acting at that time, and that he get all the salary. The shareholders present did not like this and spoke strongly against it. Sir John Hall in particular protested. The proposal was pushed through by a bare majority. The *Lyttelton Times* in a leader spoke of "a high-handed procedure".

Storage was raised to 75,000 in 1898. The old Haslam machines were taken out, being replaced by the American Hercules machines.

CHAPTER VIII

Fairfield

FARMERS in the Ashburton district were asking for a freezing works, and in June, 1898, John Grigg and Weymouth met a local committee. In the previous three months 110,000 head had come to Belfast from Ashburton County. It was decided to canvass the district, and it was found that there would be no trouble in getting the necessary capital. The number of shareholders was raised from 176 to 646 and 1,600 £10 shares were taken up. Capital was increased by £25,000, making it £75,000 in all.

Eighteen hundred acres of land were bought at £3 per acre, but this area was slowly reduced by sale to between 400 and 500 acres. The land originally belonged to the Rhodes Bros. It was bought from Clucas Bros., B. Hampton and T. Kelly. Good well water was difficult to get in this neighbourhood, and finally water-race water was run into a big artificial lake at the side of the works. In this water there was a certain amount of vegetable matter which caused trouble in processing some of the Company's products. A well over 300 feet deep was in the end successfully driven. The waste products were carried out into the surrounding light land, which absorbed them without any trouble, and was itself enriched for farming purposes. Fairton township was formed close to the works. J. C. Maddison was the architect and J. and W. Jamieson were the contractors, and, benefiting by experience, the works were made more compact. However, later it was found that the compactness had been rather overdone, making the extensions, which were soon necessary, difficult to plan.

The works were opened on 16 March, 1899, and 158,953 head were put through in the first year. A total of 750 guests were entertained and special trains came from Christchurch and Timaru. About 600 people were able to sit down at once in the electrically-lighted store room. Charles Harper, chairman of the Ashburton County Council, spoke for the Council, and Hugo Friedlander proposed the health of the Fairfield Freezing Works. He had been chairman of the committee which organised the placing of the locally held shares. The scheme had only been formed six months before, and 524 new shareholders in the county had subscribed most of the money. Rolleston spoke, and pointed out that the agricultural and pastoral sides of farming had been brought together by freezing. F. Waymouth in his speech said that in 1883 it cost 2½d. per lb. to freeze a carcase and in 1899 only ¼d. Cost of freight and insurance were down to one-third of the original figures. He urged a reduction in railway charges in frozen meat. John Grigg was there in a wheeled chair. He was then going blind.

W. Chrystall in speaking for John Grigg at the annual meeting in December, 1899, pointed out that the Company had paid 8 per cent for the year, which included the cost of getting Fairfield started. He hinted that 8 per cent was a reasonable dividend for a freezing company to pay, and shareholders should not expect any more. Further profits should be devoted to lowering charges.

Fairfield was the abattoir for Ashburton till 1908.

In August, 1898, the Canterbury A. & P. Association, disturbed by the continual reports of New Zealanders returning from London after inspecting the London docks, Smithfield and butchers' shops in England, called a conference. M. C. Orbell, of Geraldine, spoke, and advocated his scheme of one big meat company. Waymouth represented the C.F.M., and offered unanswerable arguments against it.

This scheme, that all the freezing companies in New Zealand should be merged in one big company which would then be in a position to reorganise the chaos of New Zealand meat selling on the London market, was strongly advocated by Orbell and by one of the

Nathans of Wellington. The object was highly laudable, the means wildly unrealistic. It had as much chance of happening as the League of Nations had of stopping war. The proposed members barely paid it the compliment of arguing against it. They ignored it and went on with their business. Orbell continued to figure in the meat business and was a leading figure in the merger of the C.M.C. and the New Zealand Refrigerating Company.

CHAPTER IX

Changes on the Board: Sir George Clifford Takes Control

THERE WERE NUMEROUS CHANGES on the Board during the years 1900 and 1901. John Grigg resigned in 1900 and died in 1901, and his eldest son, J. C. N. Grigg, succeeded him as a director. William Chrystall succeeded John Grigg as Chairman, but died in the following year (1901), and James Gough succeeded him as a director. Sir George Clifford joined the Board when Samuel Garforth died in 1901, and George Humphreys came on in 1902. John Deans died during his year in the chair, and Sir George Clifford succeeded him as Chairman after a year on the Board. F. Waymouth became Managing Director in 1901. The result of all these changes was that when Sir George Clifford became Chairman the other members of the Board were F. Waymouth (Managing Director), J. T. Ford, J. C. N. Grigg, James Gough and George Humphreys.

To complete the story of changes, J. T. Ford resigned in 1906. He was the last of the original directors, and was becoming old and deaf. Robert H. Rhodes of Bluecliffs succeeded him: he was conveniently placed to keep an eye on Pareora. This brought the Board roughly into the shape it has since followed—a chairman, two town members experienced in business, and three farmer members placed each in a position handy to one of the three works and so able to keep in touch with their local works and with the farming community as a whole.

N. L. Macbeth succeeded F. Waymouth as Secretary in December, 1901.

When John Deans died during his first year in the Chair, Sir George Clifford succeeded him and started his long and distinguished period of control of the destinies of the Company. He was a man of a different type from John Grigg—equally able, equally strong-willed, but more self-controlled and more reserved. He was more widely educated, and was trained as a lawyer, but chance and circumstance made it necessary for him to acquire a knowledge of stock and farming in order that he might rescue the Clifford-Weld partnership properties of Flaxbourne and Stonyhurst from threatened ruin.

Thirty years of battling against low prices and rabbits had taught him the principles of management. He understood figures equally as well as men. No detail was too small for him, no task too arduous.

It might be thought that the accession of such strong opinions and decisive character might herald some change in the general policy of the Company. Far from it. In his address at the first annual meeting over which he presided, he went out of his way to underline his adherence to the principles which John Grigg had laid down. These might be very briefly stated as:—

1. To provide for the farmers of Canterbury the means by which they might ship their surplus produce of meat overseas.
2. To charge for this service such an amount as would pay for all repairs and replacements and give a reasonable return on the capital invested.
3. After having built up a strong reserve fund to devote any further profits to the reduction of charges.

Among other things in this address, Sir George Clifford noted the historical fitness of his position, considering that his father had been the first man to import sheep into New Zealand for the purpose of wool-growing as an industrial enterprise. He might have added that Clifford and Weld's Marlborough sheep station, Flaxbourne, was the first large-scale sheep station in the South Island. He also remarked that the Company was a machine for turning hot meat into cold.

John Deans, had he been alive, might have commented that the Deans Brothers also imported merino ewes from Australia in 1843, in the same year as Charles Clifford did, although there were only forty-three of them. It is satisfying to all those identified with the C.F.M. to know that the three most prominent names in the history of the Company—Grigg, Clifford and Deans, were borne by men who had taken an active and early part in the sheep industry of New Zealand, and not only were they all first-class sheepfarmers, so deeply involved that their very existence depended on the success of farming in Canterbury, but they were men of first-class ability and of the highest integrity. Any company might count itself fortunate that had had its foundations laid and its destinies controlled by men of such calibre.

Sir George Clifford, having nailed his colours to the mast on the subject of the Company remaining a non-buying company, had pleasure in presenting a particularly good balance sheet. He proposed to reduce killing charges still further. He pointed out that the C.F.M. and the C.M.C. had between them spent £43,502 in railage, and that Australian rates for railage were much lower than in New Zealand. (Discontented shareholders often mentioned lower Australian costs of putting meat on the London market. This was one of the reasons.)

CHAPTER X

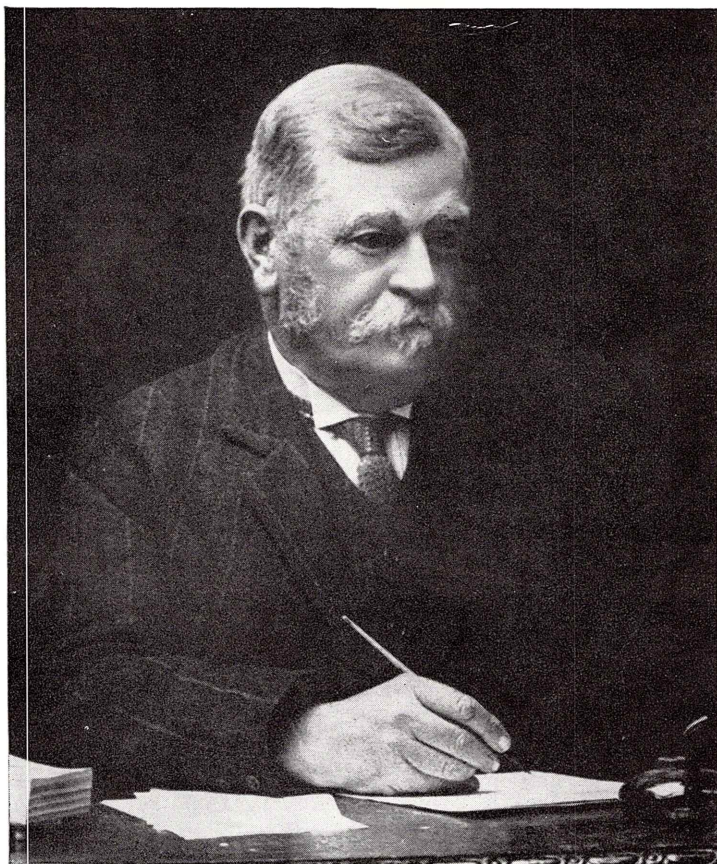
The Pareora Works

IT WAS DECIDED by the Board to issue 5,000 shares of £10 each, £7 10s. paid, in view of the decision to build the Pareora freezing works. Through delays and other circumstances the cost turned out a good deal higher than the estimate; the bank became alarmed at the size of the overdraft, and informed the Company that it would have to issue preference shares to reduce its indebtedness. 15,000 Preference Shares of £5 each were taken up. Cuthbert Harper toured the country and was successful in placing them.

The Pareora works were said to be the biggest building contract let up to that date in Canterbury. Every effort was made to get all improvements incorporated in their design. The sheep walked up ramps to the killing floor, the capacity being 5,000 sheep a day. The architect was J. C. Maddison and the contractors were J. and W. Jamieson.

The proposal to build works at Pareora had met with strong opposition. The chief reason for going ahead given by the directorate was: "If we don't do it, someone else will". The first sod was turned by Mrs. W. Evans, wife of the chairman of the Timaru Harbour Board, and the works were opened on 7 April, 1904. The date corresponded very nearly with the twenty-first anniversary of the founding of the Company. A special train ran from Christchurch and another from Timaru.

The following description is taken from the *Timaru Herald*, which described the opening as "the biggest thing of its kind ever held in South Canterbury".



SIR GEORGE CLIFFORD
Chairman, 1902-1930

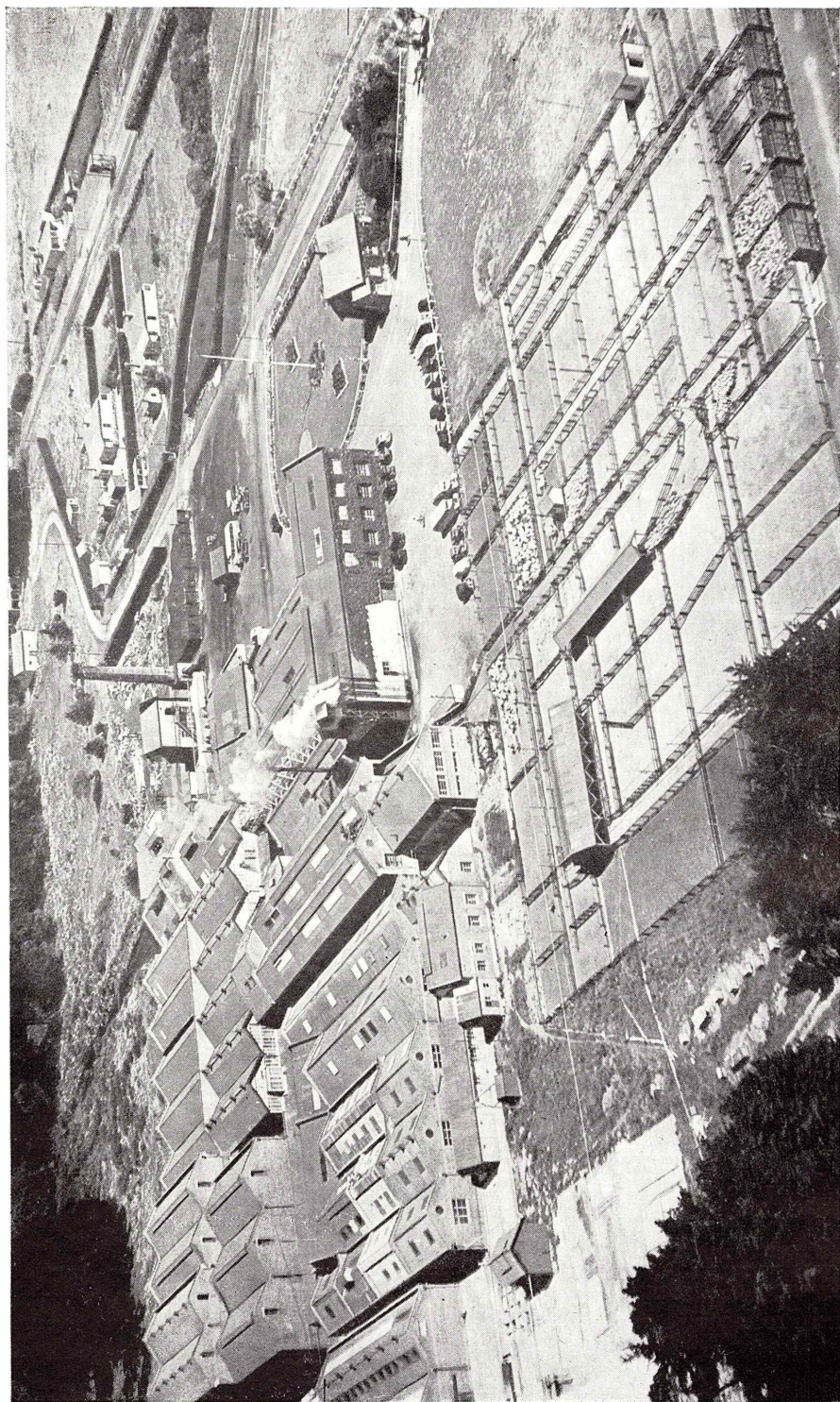


THE OPENING OF THE PAREORA WORKS, 7 APRIL, 1904.

The arrows points out Sir George Clifford (*Chairman*). On his immediate left are Messrs. J. C. Maddison (*Architect*), R. H. Rhodes, J. C. N. Grigg and G. Humphreys (*Directors*). On his far left (wearing straw hat) is F. S. Candy, first manager of Pareora.



On Sir George Clifford's immediate right are Professor J. Macmillan Brown, W. G. Jamieson (*Contractor*), F. Waymouth (*Managing Director*), and J. S. Jamieson (*Contractor*); W. A. Gee is between Waymouth and J. S. Jamieson; J. Craigie (*Mayor of Timaru*) and W. Evans (*Chairman, Timaru Harbour Board*) are immediately behind Professor Macmillan Brown.



THE PAREORA WORKS. AN AERIAL VIEW, 1950

Two specials were run, and, of course, many farmers and others came by road. All started proceedings by making a tour of the works. The massive Hercules refrigerator, the big silent slow-running engine, was looked at with something like awe. Three hundred sat down to lunch in the wool store. The chairman and all Board members were there and numerous local dignitaries such as F. R. Flatman, M.H.R. for the district, J. Craigie, Mayor of Timaru, W. Evans, Chairman of the Timaru Harbour Board, R. H. Rhodes, Chairman Waimate County Council (later to be a member of the Board), and C. J. Harper, Chairman Ashburton County Council. Only eight months had passed since the builders started work. The Mayor of Timaru and the Chairman of the Harbour Board both spoke, also Mr. Flatman, one of the best of the farmer members who have sat in Parliament. Sir George in his reply mentioned again that his father had been the first to stock a sheep run in the South Island and so could claim to be a pioneer of the New Zealand sheep industry. He referred to "the capacious brain and strong will of John Grigg", whose efforts had led to the establishment of the Company 21 years earlier. He believed that there would be plenty of work for both companies to do in South Canterbury.

F. Waymouth, who also replied, said that the Company had 700 farmer shareholders. They had sent some of their best foremen and other hands to start the new works.

Mr. Jamieson, the builder, mentioned that a freezing works expert who knew most of the works in the world had said that Pareora was the best-designed works he had seen.

The next annual meeting was a very unpleasant one for the Company. For the year ending January, 1905, there was a loss of £6,092. This was actually nothing to do with the opening of Pareora, but it gave the critics a feeling of "I told you so". The reason for the loss was a steep drop in the killings—from 950,141 to 608,404. Moreover, the board had paid an interim dividend of 4 per cent which gave the critics a further handle. Sir George pointed out that there was a decrease in New Zealand shipments

of 582,161 carcasses and he blamed the farmers for their heavy killings of ewe lambs. He did not allude to another reason, but everyone realised that owing to the known shortage of sheep in Canterbury, there had been keen competition to buy sheep on the farms, and this had pushed prices up so high that farmers naturally accepted the good offers, and the C.F.M. with its non-buying policy had to go without stock.

The low killing was not enough to pay working expenses, and the Chairman had to announce with regret that the Company would be forced to raise its killing charges. It is not often that a university professor takes an active part in an annual meeting of shareholders. It may fairly safely be said that no professor ever opened with the remark made by Prof. Macmillan Brown, "I believe I am right in saying that I am the largest shareholder in this Company". He proceeded to castigate the board, accusing them of reckless "plunging". Other critics were A. W. Rutherford, Friedlander, R. M. Macdonald. What made the Chairman's position worse was that it was generally known that the C.M.C. was about to declare a dividend of 8 per cent. This was because, although they had bought at a high figure, the London market had held remarkably firm throughout the season owing to the shortage, and they had done well out of their purchases. Professor Macmillan Brown had already spoken strongly against the Pareora project at a meeting held in the Chamber of Commerce Hall in Cathedral Square.

In the next year, although the killings were even slightly less, the rise in killing charges was sufficient to make possible the payment of a fair dividend. When the heads of the C.F.M. opened the papers in the morning after the meeting of the C.M.C., they would have been hardly human if a faint smile of gratification had not for a moment illumined their faces. The swing of fortune had been evenly balanced, and the exactitude with which her favours were dealt out was really rather comic. The chairman of the C.M.C. was at this time F. de C. Malet, a man whose ability was only exceeded by his own high opinion of his powers. While he had been away, his co-directors had absorbed the N.Z. Refrigerating Company (he

implied that they had the impertinence to do so). This balanced the building of a Pareora works. The market had again opened very firmly and again farmers were able to demand and obtain very high prices for their sheep. But this year a rise in shipments from Australia had been sufficient to cause a slight over supply. Prices slipped and continued steadily to slip right through to the end of the season. The C.M.C. finished up with a loss of £26,000. Professor Macmillan Brown was also a shareholder of the C.M.C., and to make the parallel complete rose to his feet to open the barrage of criticism. Again he used the word "plunging". He went further this time. He considered the directors were overpaid, and if there was no dividend they should get no fees and their higher-paid officers should also be reduced. John Hall told him (politely) not to be a fool.

The result of the heavy loss suffered by the C.M.C. was that Gilbert Anderson ceased to be managing director of that company. He was sent on a mission to England by the company, and he remained there and became one of the best-known figures in the meat trade in London.

This chapter of accidents proved that each system had its weaknesses, and that there was room for both companies, working in their different ways, to deal with the meat production of Canterbury.

In 1906, ewe totals in the South Island rose by 730,000 and prospects for the following year were good.

Waymouth resigned in March, 1909. He had been succeeded as secretary by N. L. Macbeth. The position of managing director was not again filled. Herbert Elworthy, a much valued director, succeeded R. H. Rhodes on the board in 1918. B. W. Glass, who had been chief engineer and who had also been to some extent manager at Belfast, resigned and was succeeded by W. P. Anderson of Fairfield as engineer. C. S. Harper, Manager of Fairfield, son of Sir George Harper, and a very promising man, joined Borthwick & Sons.

The million figure of annual killings was first passed in 1906, when the total was 1,075,640. This rose to 1,148,814 in 1910. Waymouth noted that when the Company started operations the killing

rate was 300 a day, and the storage capacity 10,000 carcasses. When he left, the works could kill 14,000 a day and store 300,000.

Although a modern fellmongery was built at Belfast in the early 'nineties, right up to 1908 most of the green pelts were sent to Bowron's tannery at Woolston. They were worth 8s. a dozen in those days.

The Belfast Works from early times have had a sawmill and cooperage plant to handle white pine for manufacture into suitable casks for tallow, pelts and casings.

The making of manure and later of meat meal was a matter of great importance to the Company. This subject is fully dealt with in the technical chapter.

The year 1907-08 was bad all round for meat companies. All export figures were down owing to the unfavourable autumn of 1907. The C.F.M. was no worse off than others and the dividend was reduced to 6 per cent. Sir George Clifford urged consignors of small lots to allow them to be pooled.

CHAPTER XI

Review of Progress

THE TOTAL KILLINGS of stock since the works opened passed the first million in 1889, the second in 1892, the third in 1895, the fourth in 1897, the fifth in 1899, and then the sixth by the end of 1900. Sheep and lambs represented most of the total, but by the turn of the century the export of beef showed a marked revival, due to the relatively higher price of beef on the Home market. During the first six months of 1900, cattle dealt with at Belfast totalled 2,618 head.

It will be remembered that when the Belfast works opened there was only one other freezing works in the South Island. This belonged to the New Zealand Refrigerating Company, at Dunedin, but by 1900 ten such works were in operation from Picton to the Bluff, four being in Canterbury. Another noteworthy fact is that a great reduction had taken place in charges since the first carcasses were frozen and shipped. In 1883 freezing charges were $\frac{1}{2}$ d. per lb. for mutton and $\frac{3}{4}$ d. for lambs. Freight was 2d. per lb., with 10 per cent primage, and the bags were charged for at 4d. each. These rates were gradually brought down, and by 1900 stood at the consolidated rate for freezing, bagging and freight of 1.1d. per lb. for mutton and 1.2d. per lb. for lamb. If prices at Home were not quite so good as they had been earlier, the lower charges and the more thorough manner in which farmers and pastoralists went into the business of raising cattle, sheep and lamb for export, made the industry sound and profitable, and a principal element in the colony's progress and prosperity.

A fact that cannot be too strongly emphasised is that, at the beginning of the twentieth century, consumers appreciated the remarkable freedom of Canterbury flocks from disease, as evidenced by the careful inspection of those exported. Out of 254,819 sheep and lambs slaughtered at Belfast in the first six months of 1900, for example, only seventy-eight were condemned as diseased, and these were mostly suffering from some simple form of lung disease such as pleurisy, which rendered the carcase more unsightly than unfit for consumption. The bulk of the rejections after death were for bruises received on the road or when the sheep were being carried on the railways.

Since the inception of the trade, John Grigg, who was chairman up to 1900, when he resigned owing to the loss of his sight, maintained, in the face of some opposition, that the company should not depart from the principle that nothing but meat of the best quality should be allowed to pass through the works. The wisdom of this policy was shown by the fact that Canterbury lamb at once took first place on Home markets over frozen meat from any other part of the world. The average weight per carcase for mutton in 1900 was 59.99 lb. for first-class and 57.84 lb. for second-class, and for lambs 38.09 lb. for first and 33.16 lb. for second.

It is perhaps worth noting that the list of shareholders in the business rose from 108 to 600 in eighteen years, that dividends averaged just over 8 per cent, even though none was paid in 1886, and that many original shareholders had retained their holdings throughout.

By the turn of the century, also, the scientific utilisation of offal and other by-products was an important part of the company's business and had helped considerably towards the reduction in freezing charges. Manures, tallow, preserved meats, tinned tongues, neatsfoot oil, etc., were produced in large quantities. The oleo works were unique in New Zealand. The export of edible fats in 1899-1900 was 3,550 casks, or upwards of 1,200 tons. The company's output of manure in 1900 was nearly 4,000 tons, large quantities of the manure being used by farmers for growing rape, turnips, etc., on which to

fatten their sheep and lambs. Output in the last year of the nineteenth century was 6,400 bales of wool, and London catalogues show the high position that the C.F.M. brand took there.

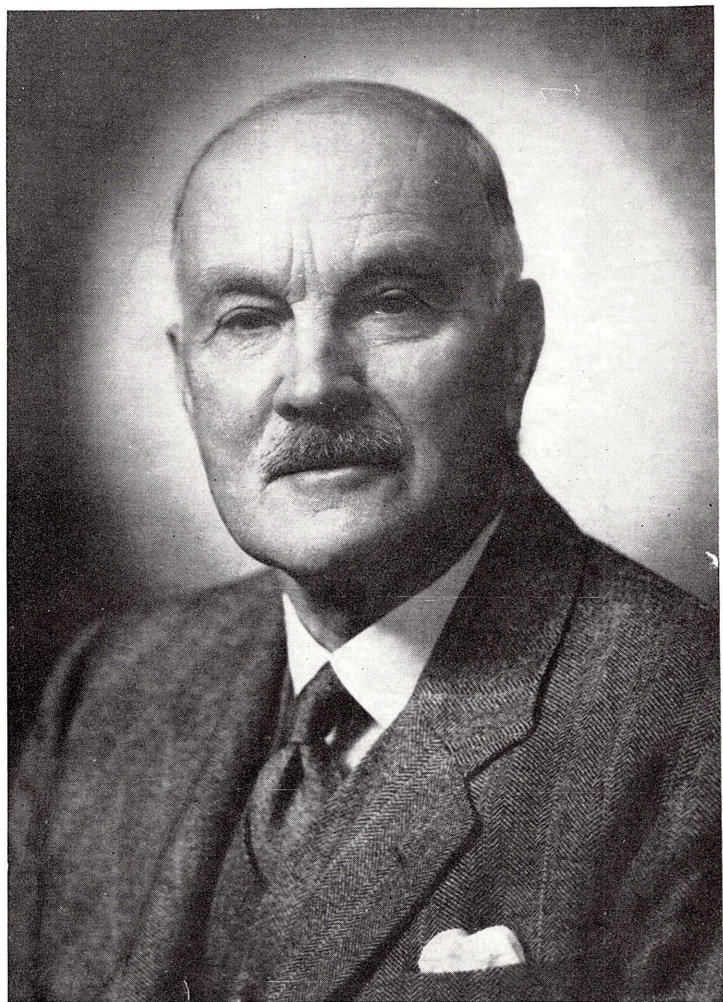
CHAPTER XII

Years of Fluctuation

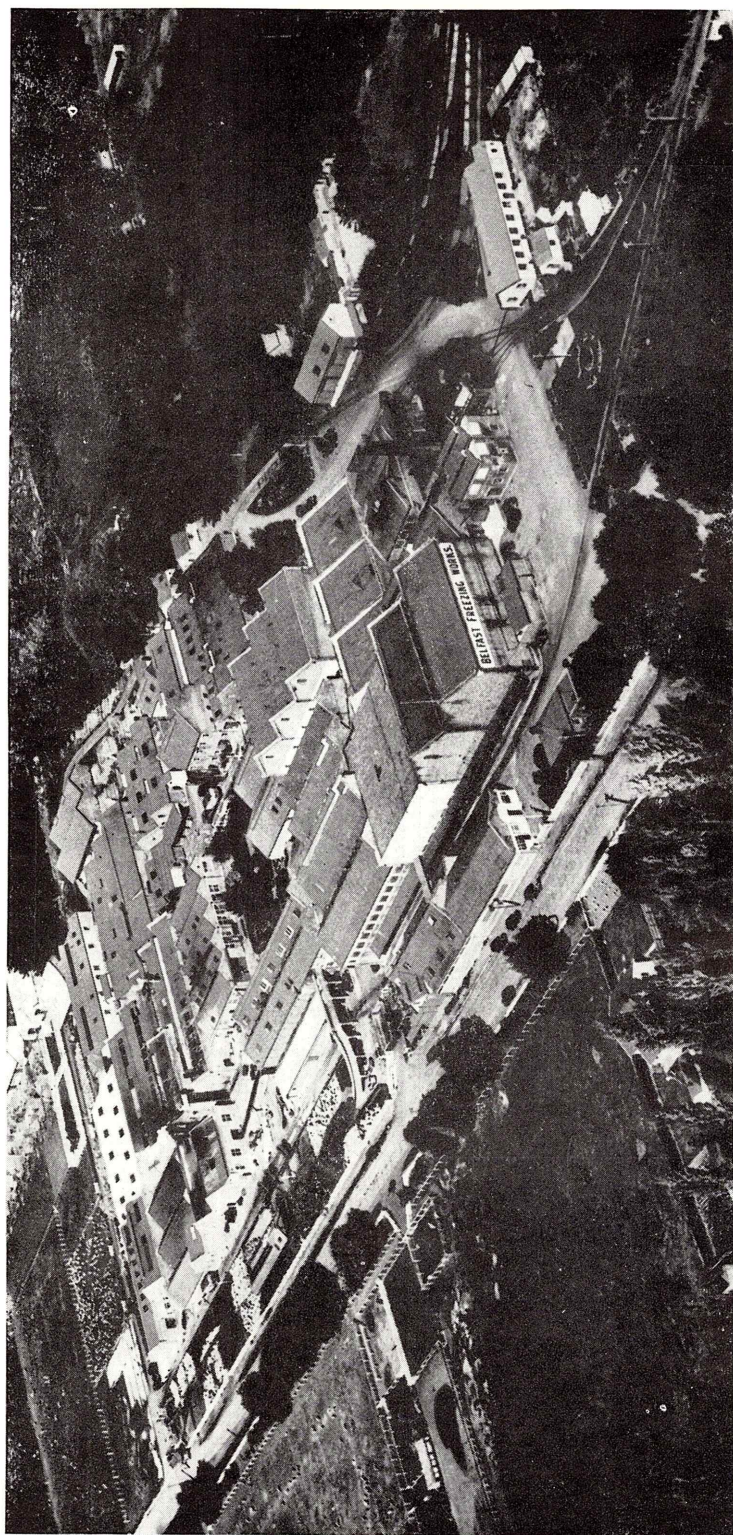
THE 1914 WAR found the C.F.M. and all other companies short of storage space. This did not imply lack of forethought on their part. But some refrigerated ships were diverted to other purposes and all shipping on the stocks was taken over by the British Government and used as they thought best. This put a strain on New Zealand meat storage which it was quite unable to meet. Companies planned an extension of their storage, but before the new buildings were completed many farmers had stock on their hands ready for killing which they were unable to get into the works. This naturally led to great bitterness, and was the direct cause of the formation of the Kaiapoi Co-operative Farmers' Freezing Works, with G. D. Greenwood as chairman. Sir George Clifford wrote to Mr. Greenwood suggesting a conference in the hope that what could end up as a redundancy of freezing works in Canterbury would be avoided. By that time, however, the movement was too much under way to be halted.

The requisition of meat and wool by the British Government made the company into nothing more than the agent of government, and the history of the commandeered times has little interest from a meat company's point of view.

The company had a very difficult job to get back to ordinary trading after the lifting of the commandeer. Killings took a forward move with the return of staff from the war and with freer shipping to relieve storage space, and in any event the company was now better off for buildings. The greatest difficulty, however, was



JOHN DEANS
Chairman since 1930



THE BELFAST WORKS TO-DAY

encountered in the United Kingdom, where agencies had been dislocated by the war. In fact, in 1921, it was difficult to sell meat and other of the company's products at all. Before the war it had been easy to sell in New Zealand stores, and the bulk of the output in fact went c.i.f. Subsequently, however, much had to be consigned Home, and sold at best possible price.

The first post-war slump of 1921 saw wool practically unsaleable for a time, the trend being discernible in a steady but evident decline in profits, with which, of course, greater local competition had much to do.

A feature of the C.F.M.'s operations throughout the 1921 and 1929 slumps, however, was the fact that executives and foremen remained unchanged in the company's service, that not one permanent member of the staff was put off, and that the whole staff shared the confidence of directorate and executives in the ability of the firm to ride out its troubles and emerge strong in finance and in the confidence of producers.

Sir George Clifford died in 1930, and was succeeded as chairman by John Deans, who had joined the Board when James Gough died in 1917. The name Deans alone is the highest recommendation possible in Canterbury. John Deans II had been chairman of the Board less than a year when he died. His son, John Deans III, has already occupied the chair for 26 years. He has the great advantage of having been born and bred a farmer, and has a natural sympathy and understanding of the farmers' point of view. In addition he has had considerable business experience outside of the C.F.M., and more important than all, he has that great quality of integrity for which his two great predecessors were so justly noted. He was president of the Southdown Breeders' Association.

Before the war, the company had had three drafters, A. S. Ford at Belfast, T. Drennan at Fairfield and R. J. Cooke (of All Black fame), at Timaru. For over twenty years the export buyers had been the biggest clients of the C.F.M. These buyers took big risks, and in the end none of them came very well out of it. The best known were Borthwicks, Sims Cooper, Nicoll Bros., W. B. Clarkson,

Kaye & Carter, A. L. Joseph and Dominion Meat Co. After the war, with more works operating the competition became more intense and the export buyers dropped out one by one.

W. B. Clarkson was for years the biggest buyer of freezing wethers and fat lambs in Canterbury. No big sale was complete without him. The works used to be open all the year round except for a comparatively short interval for cleaning boilers, etc., and he used to average 3,000 sheep a week throughout the working year.

W. B. Clarkson sent to Belfast on 8 October, 1894, one of the finest mobs of wethers ever to be killed there. There were 5,000 head, averaging 65.70 lb. Of these, 2,000 came from Duncan Cameron, Springfield Estate, 600 from Peter Clinton, Darfield, 500 from Wm. Strange, Milton, 700 from Cathcart Wason of Corwar, and the rest from south of the Rakaia.

Later he transferred his custom to the Christchurch Meat Company. It was said, with what truth is not known, that he fell out with Waymouth. He was a Yorkshire man and had been a butcher and a dealer before he became an export buyer. He once bought a line of 22,000 sheep from Moore of Glenmark, and he touched the half million mark in exports. He was said to have been the first man to pay £1 a head for fat lambs. In 1900 he revisited his Yorkshire home and gave a tremendous feast. All the village shops were closed, a cricket match was played and there were sports. A malt-house was used for the tea and there was a brass band.

Walter Hartnell was the first of the butcher-grazier-dealer type of exporters, of whom W. B. Clarkson became the undisputed king. Hartnell was a Devonshire butcher and started business in Dunsandel in partnership with Henry Chamberlain. He started buying land, and bought Lavington Station from the Mackie Bros. In the year 1886-87 he exported 11,622 carcasses, being second only to John Grigg. J. T. Matson said he was the third largest exporter in Canterbury. He was only 38 when he died in 1887.

The C.F.M., seeing the writing on the wall, had no choice but to alter its policy. By the end of 1924, the C.F.M. had 30 drafters in the field to take lambs either for consignment or to buy outright.

Another great change came about in the 1932-33 season. Up to that time solo butchers had done all the killing. The system of working was that at a signal from the foreman butcher each man stuck down four or five sheep from his pen, and skinned and dressed the carcasses. A skilled butcher had no trouble in killing 100 sheep a day. Under this system the limit was never exceeded. In 1933 an argument with the butchers seemed to be incapable of solution, and as it was a period of depression the meat companies had no trouble in getting volunteers to man a chain. This involved expensive alterations to the killing board, but killing was carried on with surprising efficiency under the new system and the standard of dressing was maintained.

The grading system with which we are now so familiar that we take it for granted was introduced some years before the 1914 war. Up to then every big exporter had his own grades and brands, the diversity of which caused great difficulties.

When the meat commandeer came to an end after the 1914 war the company, owing to its previous policy, was left without any organisation for selling in London. Two able and prominent meat salesmen, W. A. Cunliffe in New Zealand, and W. Blackburn in London, joined the staff to attend to the selling end of the business. Since that time the sale of the company's products has been developed until to-day its London selling organisation is a self-contained subsidiary company. The company started to deal systematically with offal in 1892-93, doing so in various ways—some being converted into feeding meal or manure, and some, such as livers, hearts and kidneys, being marketed for human consumption.

The advent of the second World War saw a very different picture in the freezing industry of New Zealand. The Government remembered the lessons it had learnt from the first War and the whole process of Government action had become familiar. Storage this time was adequate, and the whole industry carried on without undue troubles.

J. C. N. Grigg died in 1926 and was succeeded by his son, J. H. Grigg—the third John Grigg to be a director of the Company.

Norton Francis, who had a particular aptitude for finance, and who represented Guinness and Le Cren in the merger which resulted in the forming of Pyne, Gould, Guinness Ltd., joined the Board in 1929. He died in 1939 and was succeeded by L. D. Cotterill of Duncan, Cotterill & Company. S. E. Mair, an experienced wool buyer, joined the Board in 1944, and G. R. Macdonald succeeded Gordon Fulton, who had been a member from 1929 till 1944 when he died. M. F. Macfarlane, a grandson of John Macfarlane, became a director in 1946, and H. H. Elworthy succeeded his father, Herbert Elworthy, in 1947.

The Company suffered a very heavy loss in 1951, when the extreme wool prices brought about by international buying for stock-piling, were succeeded by a heavy price fall, coupled with the dockers' strike which held the wool immobile. Every other company suffered from the same causes.

A development in the last few years has been the great advance in the road transport of sheep. A drafter leaves his home at five in the morning, the first mob is drafted by seven, and the road transport, following on his heels, has the lambs on board and at the works at 8 a.m. This makes it easier for the farmer to plan his day, and is another example of the flexibility of road transport.

The Company has made further advances in the disposal of its products by the formation of a subsidiary meat selling company in London, and by the acquisition of a certain number of suburban butchers' shops in Christchurch and elsewhere.

The Company is an integral part of the Province of Canterbury and its fortunes have risen and fallen with those of the community. Its title (when there was no other to dispute the claim), its chairmen (all deeply involved in the progress of what was the first agricultural and fattening province of New Zealand), and its generous trading policy have all contributed to give it a special place among similar institutions. Its founder had no rival as the great farmer and stock-breeder of his day. It can look over its past history with gratification and pride and towards its future with hope and confidence.

Since this book was written two important changes have taken place, and these should be recorded to make the history of the Company complete up to the date of publication.

The name under which the Company was originally registered was "The Canterbury Frozen Meat and Dairy Produce Export Company Limited". Though no attempt was ever made by the C.F.M. to handle dairy produce, the full name was kept, and of course had to be used in all formal deeds and documents, although for ordinary purposes the short name, "The Canterbury Frozen Meat Co." has been in use since the beginning of operations.

The board decided in 1957 that it was time for the redundant words to be dropped. The registered name is now simply "The Canterbury Frozen Meat Co. Ltd."

The second important change is an issue of 25,000 ordinary shares of £10 each at a premium of £5, thereby increasing the nominal capital of the Company from £275,000 to £525,000. The reasons for this issue, to quote the circular distributed to shareholders, are the increased price of stock, the resumption of free marketing of meat, and the high capital cost involved in the expansion and maintenance of the Company's processing works.

Following on this increase of capital, the directors decided to capitalise the total amount paid in share premiums. This amounted to £125,000, which was issued to shareholders in proportion to their holdings.



APPENDIX 1

Some Personal Notes

WHEN F. M. WAYMOUTH became Managing Director, N. L. Macbeth succeeded him as Secretary. He was an able man and was universally liked. He had a very pleasant manner, and if he had to find fault did it without arousing bad feeling. He retired in 1919, went to England and later became representative of Armour & Co. in New Zealand.

B. W. Glass was trained as a ship's engineer and joined the Union Steam Ship Company. He resigned to join the C.F.M. in 1886. He superintended the installation of new machinery and was responsible for the mechanical side of the works, which included the planning and equipment of Fairfield and Pareora. After Cresswell left, he took over some of the functions of Works Manager. He resigned in 1919 and took up sheepfarming at Hawarden.

A. P. Hopkins became superintendent of the three works after Waymouth resigned. Sir George Clifford relied chiefly on him for expert advice. He was a dapper man—very short. He always wore a straw boater and white cricket shirt. He and his numerous sons could put a cricket team into the field.

H. J. Daltry was chief clerk. He was a keen volunteer and when the 1914-18 War broke out volunteered for overseas, serving in the artillery. He did not return to New Zealand, but received an appointment under the United Kingdom Ministry of Food, and stayed in England.

D. J. Shea came from Timaru and filled Daltry's place. He was a man of brilliant ability and strong will, and Sir George Clifford

placed great reliance in him. Many will remember a very large room with a very large desk in the middle of it and behind the desk a very small man with keen penetrating eyes. He became General Manager, and died in 1944.

R. D. Iles was Shea's assistant and succeeded him as General Manager, which office he still holds.

A. D. Wilkie joined the Company in 1906 and started at Fairfield. He came to Christchurch in 1913 and has remained there ever since. He has capably filled the position of interim manager of works on many occasions.

N. P. Bergin joined the Company in 1912 and was first at Pareora, then went to the Timaru Office, and in 1921 came to Christchurch, where he has for many years been one of the senior executives. He has recently returned from a season spent in the office of the Company's London subsidiary.

A. A. Mitchell will next year complete 50 years in the Company's service. He started at the Timaru Office, then went to Pareora, and came to Christchurch in 1914. He went to the 1914-18 War in 1915 and lost an arm at Passchendaele. He is a popular and efficient liaison man between farmer clients and the Company.

D. P. Garrick joined the Company in 1904, went first to Belfast, succeeded Cuthbert Harper as manager at Fairfield, then came to Belfast as manager. He retired in 1950.

A. G. Kinvig joined in 1916 after a short time at Belfast, came up to Head Office at Christchurch, and is still in the service of the Company as ledger-keeper.

W. A. Cunliffe, who had been with Parker & Fraser before the War, and with the Ministry of Food during 1914-18, joined the Company on the selling side. He left in 1930.

W. E. Blackburn was appointed the Company's representative and meat salesman in London after the 1914-18 War until 1926. Then L. A. Nicoll handled the meat until 1939.

Two of the ablest young men who ever entered the meat business were both employed in the Christchurch Office—A. E. Cooper and

Arthur (later Sir Arthur) Sims. A. E. Cooper succeeded J. Malcolmson at Fairfield in 1900. Arthur Sims joined Cooper in founding the firm of Sims, Cooper in the year 1905. Cooper's nephew, K. C. Cooper, is now Manager of Fairfield.

Charles Spring joined the staff in 1902, and was appointed stenographer to Waymouth. He was the first person to use a typewriter in the Christchurch Office. He completed 48 years' service in 1950. He had been appointed Accountant in 1919 and Secretary in 1944. He had very considerable ability, and devoted the whole of it to the service of the Company.

K. F. S. Cox, the grandson of the Canterbury pioneer, Percy Cox, joined the Company in July, 1946, and succeeded Charles Spring as Secretary when he retired in 1950.

Frank Candy, the first Manager of Pareora, was one of the outstanding Works Managers in the Company's history. He was deliberate but not slow—a man of great courage. He left to join the Hawke's Bay Farmers' Meat Company, and established the Whakatu Works at Hastings.

L. B. Pearson went to Pareora about 1913, succeeding Candy as Manager. He retired through ill health in 1934. He was one of the well-known Pearson family of Burnt Hill.

W. S. Minehan took over the management of Pareora from Pearson. He had previously been in the Timaru Office.

G. M. Breeze succeeded Garrick at Fairfield when Garrick went to Belfast. He was one of the most successful of the Company's Works Managers. He was very well liked by farmer clients. He died in September, 1950, and was succeeded by K. C. Cooper, who had been Assistant Manager at Belfast.

E. C. Hartridge, Head Office Engineer, who had been designing engineer to J. J. Niven & Co., joined the Company about 1945.

John Nurse, Allan Little. Promising young employees of the Company, lost their lives in the Second World War.

Of the present staff Langford Symes has an unchallenged claim to be called "the father" of the Company. He studied chemistry under Professor Bickerton, with particular reference to fertilisers and

feeding stuffs. He joined the Company in 1896, and Waymouth told him to work for a couple of seasons in the fertiliser department to learn the run of the ropes. In 1899 a laboratory was built for him, but he enlisted and went to the South African War, got enteric and returned to Belfast in 1900. For the next four years he worked in the laboratory, helping in the works office at busy times. In 1904 he went to Pareora and took charge of the tallow and manure department. After six years he returned to his work at Belfast, where he has continued to the present day as the Company's senior chemist.

APPENDIX 2

Technical Progress

(Contributed by L. P. SYMES)

THE BRITISH have always been backward in chemical research, but it took the disasters of the first World War and the marked superiority of the Germans in applying chemical research to manufacturing problems to bring the lesson home to them.

The first laboratory was built at Belfast in 1899, and the writer, who had studied chemistry under Bickerton at Canterbury College and had been gaining practical experience in the works, was appointed the first chemist. The commencement of his duties was delayed by a year's absence at the South African War, and after he returned he did not spend his whole time in the laboratory but during the busy season helped in the Works Office.

For a time it was considered that artificial manures were the chief, in fact almost the only problem that should engage his attention. But the growing importance of by-products, and the general realisation of the importance of research, soon widened the scope of his work.

As this is an attempt to review technical advances in the freezing industry it is necessary to run over briefly improvements in the actual freezing process. The first cargo of frozen meat left South America in 1876, and in 1880 the *Strathleven* delivered a cargo of frozen meat from Sydney to London in good order. The *Dunedin* froze her cargo of wethers on board in 1882, and landed them in reasonably good condition. All freezing was done for the first ten years by the cold air machines, of which the Haslam Company was

by far the leading manufacturer. The carcasses were hung in chambers, and the cold air was blown through kauri ducts or trunks at a temperature of minus 40° Fahrenheit. The carcasses, being relatively warmer than the air, always lost moisture to it; this formed snow which blocked the trunks, cutting down the air circulation and giving the "snow-men", who had to crawl through the trunks, a bad time in clearing them.

At this time the chambers and cold stores were insulated against heat from outside by fitting the walls, floors and ceiling with charcoal. Charcoal went out of favour when it was realised that it led to a considerable fire risk, and the charcoal was replaced with pumice. This was an improvement from the point of view of safety, but it was found that the pumice gradually absorbed moisture and so lost its insulating properties. The job of periodically removing it and spreading it to dry was tiresome and laborious. Newer buildings have been insulated with slabs of cork.

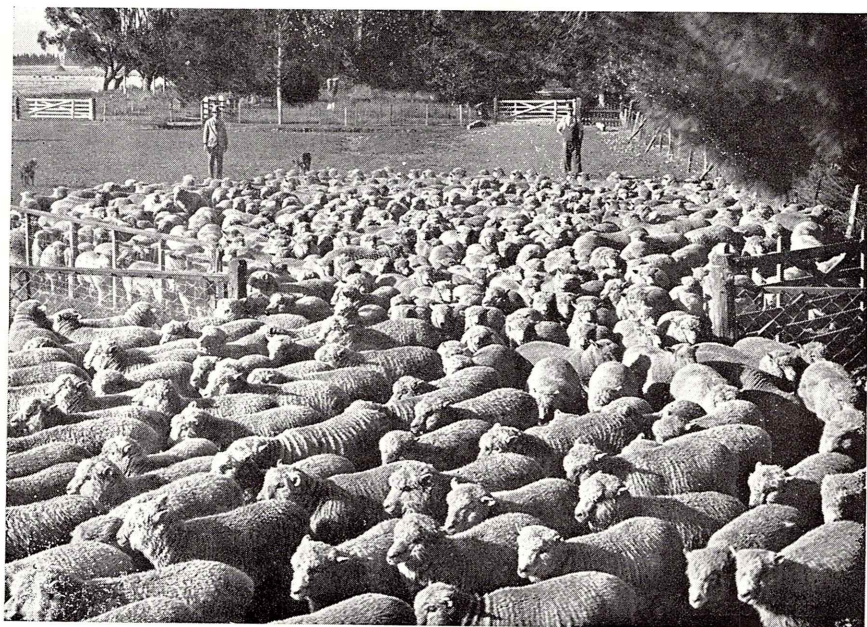
A change of freezing system came in 1893, with the installation of a J. & E. Hall machine, using in its compressor carbonic anhydride (CO_2 gas), which after liquefaction refrigerated a calcium chloride brine in a tank in the engine room. This was an improvement, but snow still had to be removed from the outside of the pipes and brine walls in the freezing room. Gas for the Hall machine was expensive, and later this machine was replaced by an American Hercules machine using ammonia, and this type came into use in the three works.

The latest development is "blast freezing". Fast-running compressors send liquid ammonia directly to equipment in the freezing chambers, thus eliminating the use of brine, and fans circulate the refrigerated air round the carcasses. This gives faster freezing, and there is also an ingenious arrangement which defrosts equipment between changes of meat.

Till about 1900 power was obtained directly from steam engines, usually involving long steam pipes or long shafting with belt drives, with considerable loss of power. By 1904 electrical distribution of power began at Belfast. Powerful 220 kw. D.C. generators were



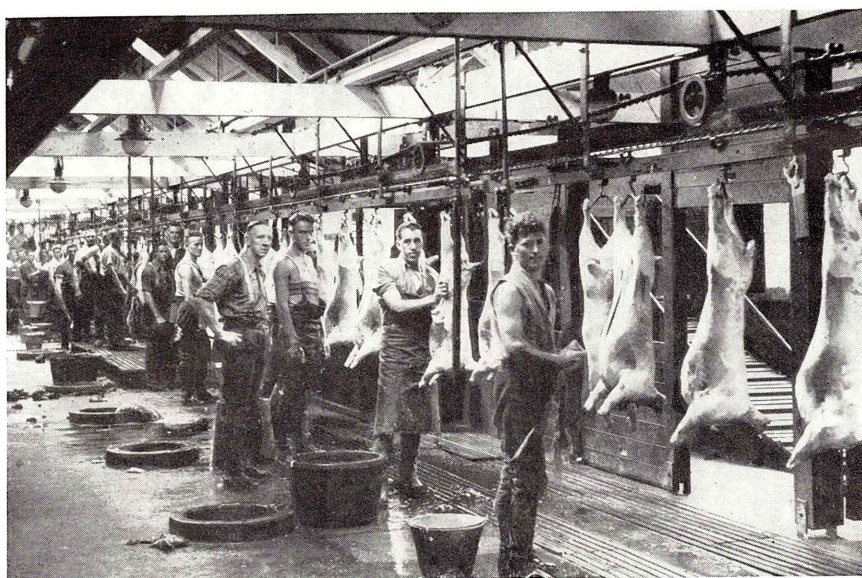
AN EARLY PHOTOGRAPH OF THE FELLMONGERY AT FAIRFIELD



PRIME CANTERBURY LAMBS



THE 'SOLO' BUTCHERING SYSTEM, *in which each man killed, skinned and dressed his own sheep*



THE 'CHAIN' SYSTEM, *in which each man does a different stage of the work on the carcase. This photograph was taken soon after the introduction of the system in 1933*

installed in all works. By 1910 power had become inadequate at Belfast, and two further generating sets were installed. For the first time, there was power and to spare. When Lake Coleridge began to supply power all the old steam engines and D.C. generators were replaced, bringing the works coal consumption down from 9,000 to 2,000 tons per annum. All this expensive equipment was sold to the various North Island works, where State Hydro-electric power was still some way off.

To safeguard the meat in store it is necessary to provide against failure of the external power supply, so sufficient steam-driven plant has been retained to take care of essentials. Fairfield, owing to its peculiar needs, has also a Diesel driven generating set.

It is not easy to protect freezing works against fire, and though each has had its own fire brigade, bitter experience has taught much. All three works are now equipped by pipe reticulation and the strategic arrangement of fire pumps, so that any breakdown of the fire-fighting gear should not occur. There are also, of course, complete fire alarm systems.

A sizeable freezing works requires upwards of half a million gallons of water a day—and even then the staffs of the works rarely think they get enough—and the founders of the C.F.M. were wise in selecting the Belfast site, where they could draw from the Kaputone Creek and sink artesian wells.

The supply of water for Fairfield in 1899 was not so easy. No wells were available, so the intake of the local water race was enlarged and the water from it stored in a large pond. Most of the silt deposited in the pond, but for potable purposes the water required filtration, and in summer months it became inconveniently warm.

Fifty years ago, there was a current rumour that an attempt had been made to drive a pipe down to seek some better water, but that as the pipe came up in the next paddock, the attempt had been abandoned.

However, as the Geological Survey had located underground water round about Fairfield, a 6-inch well was put down to about

300 feet into a supply of good cold water, which is brought to the surface by an air lift. This meets the needs where potable water is required in connection with edible products and domestic uses.

Proximity to the Pareora River was the main reason for building the Pareora works where they are, rather than putting them closer to Timaru, where labour would be more readily available. All things considered, this was a wise decision.

Supplying the water is one thing, getting rid of it after it has been fouled with works' wastes is usually more troublesome, as freezing works effluent is notoriously difficult to render inoffensive. Pareora drains into the open sea and gives no trouble. At Fairfield, good use is made of the effluent to fertilise the considerable area of shingly land near the works.

BY-PRODUCTS

The Company was so busy in getting started, in expanding, and in rebuilding after the fire of 1888 that it had little time to think of disposing of by-products at a profit.

Matters were simplified by the fact that nearby were situated two concerns which both dealt in by-products of a freezing works. Mein and Watt's Provision and Produce Company was primarily a boiling-down works combined with a fellmongery. They made silkstone soap, sold tinned meat when they had better class sheep to deal with, and, of course, they dealt in pelts and wool. Moorhouse's Chemical Works was the first to turn out artificial manures, with which, being rather ahead of the times, they provided a guaranteed chemical formula. These premises were on the corner opposite Borthwick & Sons' entrance. They made tallow and neatsfoot oil and dried blood over slow fires, thus contributing considerably to the smell for which Belfast was famous. They had the first sulphuric acid plant in Canterbury. They contracted to take heads, trotters and other inedible offals. But apparently there was a limit to what they could take, as the Company had continued carting out and burying offal for the first ten years of its existence.

William Nicholls, who was in charge of the fellmongery of the Provision and Produce Company, helped the C.F.M. to get its own

fellmongery started. He was succeeded by George Ellis, whose brother, Harry, became foreman fellmonger at Belfast.

Generally there has been little change in fellmongering practice since 1892. Skins are still cold-water washed in "dollies" or paddles, deburring machines are no longer used, but the de-wooling paint is applied on a moving conveyor instead of on the piled skins.

The same depilatory paint is still used, but its strength can now be readily controlled. Search for a better depilatory, which will do less damage to the wool and pelt, is being made jointly with the Leather Research Association, and the prospect is very good.

The wool is removed from the painted skins by the "pullers" who sort it. Sixty years ago nearly all the wool was spread out in paddocks to dry, very little being dried artificially, as fellmongers considered they got a better colour by sun drying. Spreading and turning was most laborious, and a shower of rain caused a commotion. To-day not only is all wool machine-dried, but provision is made to get the best "conditioning" feasible.

There is more mechanisation to lighten labour and speed up the work, and the fellmonger can turn to the laboratory for checks on the regain and grease in his product, and on the materials he uses. Some mention should be made of "pie-wool". This is the wool from pieces which are trimmed off the woolly skin, and are not "painted" with depilatory. Pie-wool is loosened by allowing the skin to putrefy, a repulsive and laborious job, and after separation the wool is washed and dried. Well worked, this wool can be a good useful product. For a reason still not completely understood, it sometimes has a tendency to spontaneous combustion, but fortunately this risk can be detected.

A great deal of research work has been done in Australia recently in the use of "enzyme" preparations to get quick sanitary "pieing", but unfortunately so far costs have proved too high.

PELTS

Working the unwoolled pelts was not done by the Company until 1902. Until then the pelts were sold to local tanneries as they came from the pullers.

Generally, New Zealand sheep and lamb pelts were not favoured overseas, one reason being that coarse-woolled or hairy skins made more useful leather, and we tended to finer-woolled breeds. Another factor was that the processing methods then used were not very reliable. However, the processing or "pickling" of pelts is being continually improved, and the New Zealand Leather and Shoe Research Association is a source of much useful information.

The writer looks back to the days when pelt curing was done by rule of thumb and personal judgment. The pelt curer took the density of his pickle with a potato and judged the acidity by tasting it. Gone also is the bran drench which occasionally did an excellent job, but was very temperamental, and moreover, because of its odour, caused those who worked with it to be shunned by their fellows. Standardised artificial bates have replaced the bran drench—they have almost no odour, and, properly handled, give consistent results. We now have laboratory tests for every stage from the sheep's back to the pickled skin stored in its cask.

For many years hearts and livers had a very poor market, and so nearly all went "to vats", that is, were boiled down for their fat and manurial value. The value of livers jumped when liver extract came into use for medicinal purposes. Nowadays both livers and hearts, when healthy, are satisfactorily frozen and exported. The freezing of livers and kidneys to come out in good condition is not a simple matter, and it was many years before the know-how was achieved.

From certain intestines sausage casings are prepared, and in 1887 Henry Berry & Co. contracted to purchase for three years the cleaned raw "runners", after which various firms carried on the business of doing the finishing for market. In 1931, the Company undertook the finishing and marketing of these materials on its own account.

Caul and kidney fat is rendered to produce an edible product, but it is uncertain if the Company did this before 1890, when digesters were used to render it.

In 1894 a Dutch firm of margarine makers, Hagemann & Co.,

arranged to buy these fats, and built their own "kettle rendering" plant at Belfast. They made an intermediate product called "Premier Jus", most of which went to Rotterdam, where it was used in making the finished margarine.

However, due to a bad market with vegetable oils replacing animal fats in margarine, combined with an unfortunate venture in cocoa manufacture, the Dutch company failed, and in September, 1903, the C.F.M. took over Hagemann's plant, and also their New Zealand Manager, Mr. G. de Vries and his staff. Later, Mr. de Vries ably represented the C.F.M. in London, where he died.

The market for Premier Jus soon lapsed, and a return was made to the production of edible tallow, for which the existing tin-coated kettles, while using a modified process, were eminently suitable.

Inedible tallow is made from meat cuttings, bones and inedible carcase material. As already stated, this for the first few years went to the boiling-down plant at the Belfast Chemical Works. This arrangement did not always work smoothly, and at some time or other offal was fed to pigs in "Griggs" paddock or buried.

In the early eighteen-nineties digesters were installed for "boiling down" the offals. These, when loaded, were closed and steam blown in to a pressure of about 40 lb. per square inch. This was essentially a stewing process which took four to six hours' cooking, and separated the fat by partial breakdown of the animal tissues. The residue, or "ashmegandy", was dried in a machine for fertiliser material, as was the blood.

In this digestion process much of the meaty tissue dissolves and forms a soup. It is possible to recover this dissolved matter by evaporating the water away, thereby producing a nitrogenous powder of considerable fertilising value. The necessary plant was installed at Belfast about 1917, but as the evaporation process did not prove economical, it was abandoned.

In 1929, the first "Iwel Laabs" dry rendering machine was bought for Belfast. Dry rendering is essentially a "frying" process, the offal material being cooked in its own fat and the natural moisture dried out. By this means the small amount of material that becomes

soluble is retained in the dry product and not lost as in boiling down. The tallow is spun out in a centrifuge, so that the residue contains little moisture or fat, and makes a palatable stock food or feeding meal, for which there is an unlimited demand from stock and poultry feeders.

When the early "headaches" in working the dry rendering were cured, the process was so satisfactory that all three works are fully equipped with the Iwel-Laabs machines.

CASINGS

An important by-product is sausage casings, which are made from several parts of the gut, the main source being the very long small intestine of the sheep. This, in the untreated state, is called a "runner".

In this case there was a market available at an early date, the runners and the like being sold in the raw state to processors until 1931, when the C.F.M. decided to work and market the finished goods.

Processing comprises cleaning, grading and preserving in salt, with final packing in barrels. Overall there has been little change in method but small refinements and experience have improved the working and made it much less unpleasant.

COOPERAGE AND BAGROOM

As the Company's products have to be covered or packaged in some way, some containers are bought, but meat bags and casks, many thousands of each being required, are made at Belfast.

About 1890, a small cooperage was built at Belfast, where Jack Morrison hand-built tallow casks, the staves and heads coming from town. Cooperages were also installed at Fairfield and Pareora, but as business increased and casks were needed also for pelts, it was decided to centralise cask-making at Belfast.

A commodious brick cooperage was built and equipped with machines to do much of the work. Thus the timber could come straight from the bush mills, and after seasoning, be made into staves and heads on the spot. Machines are also used, where possible, in

making the casks and save much hard work. The cooperage also makes and prints boxes for packaging canned meats and the like.

Finding a suitable material to cover the frozen sheep when Belfast began presented a difficulty, and apparently even canvas bags were considered. For some years a kind of cheesecloth was used, until recourse was made to stockinette, as now used. The cheesecloth had to be sewn into bags, which required a considerable team of girls, and as it was heavily loaded with dressing, the dust was most unpleasant. The stockinette, being tubular, has only to be branded and cut in bag lengths, and one end sewn across. Also, there is much less dust from it, and this is much easier to control.

CANNING

In 1890 a "preserving" department was instituted to can such edible meat as could not be suitably frozen, or was intended for places without refrigeration.

It is well to recollect that the canning process developed by the Frenchman, Nicholas Appert (1750-1841) and used since 1804, was revolutionary in that it preserved meat and vegetable foods regardless of the climate in which they were to be held. Moreover, the process changed the food so little that where this canned food was used, scurvy and other deficiency diseases were largely eliminated.

The first "preserver" at Belfast Works was Robert Caldwell. The Fairfield department, when established was in charge of Arthur Young. Fairfield and Pareora departments were closed about 1910 when the work was concentrated at Belfast.

For years, the Company made its own cans by hand, the joints all being soldered. At first the filling was done by putting in the proper weight of lightly pickled meat and then soldering on the lid which had a small hole or vent in it, this to allow the air and steam to escape during cooking. The filled tins were then placed in a bath of hot calcium chloride brine until cooked, soup stock being run in during the operation. The can was then sealed by soldering the vent—a trying job when leaning over a tank in a cloud of steam. After cooling the cans were cleaned, lacquered and labelled.

The first advance came with vacuum closing. Much the same type of can was used, but the air was sucked out mechanically and the vent soldered in a box under vacuum, cooking followed in steam-heated retorts.

This method of canning is used now only for unusual packs: lamb tongues are now packed in what is known as the "sanitary can", so called because no solder can reach the contents. These cans, when filled, are fed into a machine which puts the lid into position, extracts the air and then rolls the edges of the lid to make an air-tight joint. The sanitary can is virtually machine-made, some set-ups turning out 350 cans per minute. A further advantage is that in this process the cans can be lithographed with the brand, so avoiding the use of stuck-on paper labels, which are apt to fall off.

Nowadays the C.F.M. does not can much apart from tongues, but in each war, the Company has done its share in providing canned meats, M. & V. rations and the like, for the armed forces.

APPENDIX 3

Report of Committee

Presented 21st December, 1881

That the success attending so many recent shipments of frozen meat from Australia to England at once disposes of the question of the practicability of the proposed undertaking: your Committee would, therefore, chiefly direct your attention to the following points:

1. As to the quantity of sheep, cattle and dairy produce available for export at the present rate of production.
2. The price at which it is now being produced.
3. The probable rate of increase when a certain fixed minimum price is obtainable at that season of the year when fat stock can be produced at a small cost.
4. That such an establishment becomes a necessity.
5. The co-operation of shipping and insurance companies.
6. The combination in England of all shipping companies and Colonial agents to obtain suitable storage and means of placing the shipments in the market as required by consumers.
7. The obtaining of a suitable site for the proposed operations.
8. The indirect general advantages that must accrue to the whole community but especially to the landowners and to those whose interests are most immediately connected with the value of real property.

In answer to the first point:—

The number of sheep in the Canterbury district, according to the last return, is	-	-	-	-	3,487,220
The increase over the preceding year	-	-	-	-	317,129
The number of sheep in the Amuri district, according to the last return, is	-	-	-	-	286,097
The increase over the preceding year	-	-	-	-	23,762

The export of tallow for the year ending June 30 was	-	1,650 tons
The export of preserved meats for the year ending June 30 was	- - - - -	2,382 cwt.
The export of butter for the year ending June 30 was	-	3,784 cwt.
The export of cheese for the year ending June 30 was	-	6,480 cwt.

On the second point, as to the price at which meat is now being produced, reference only need be made to the stock salesmen's reports, from which it appears that mutton is now selling at 1½d. per lb., and beef about 20s. to 23s. per 100 lb., but beef from November to July may be quoted at less than 20s. per 100 lb. Butter is 5d. to 6d. per lb. and cheese 3d. to 4d.

3. This point, as to the probable increase of production, with a certain market available, is one which can only be met by conjecture, but is one easily appreciated by practical farmers. It would not, in the opinion of the committee, be too sanguine an estimate to put the probable increase at from 15 to 25 per cent in two years, and that it would go on increasing in a gradual progression dependent on the seasons.

4. As to the necessity of providing some such means as is proposed for rendering stock saleable. This must be admitted if the foregoing statements are to be held correct.

5. In alluding to the question of securing the co-operation of shipping, railway, insurance and other companies in establishing and extending such an enterprise, your committee thinks it may be taken for granted that their own commercial success is so closely identified with pastoral and agricultural interests, that they must necessarily unite in providing suitable means of carriage, facilities for storage and sale, etc. In fact, we have only to direct attention to the following circumstances to prove that such institutions are already alive to the importance of the new industry:

The Orient and P. and O. Steamship companies have already fitted their Australian steamers with the necessary machinery for carrying cargoes of frozen meat and produce.

The Albion Shipping Company has fitted up one of its best ships, the *Dunedin*, now lying in Port Chalmers.

The New Zealand Shipping Company is having a refrigerator placed on board the *Mataura*, now about leaving London for Lyttelton.

The English insurance companies offer to cover shipments against all risks, including deterioration on board ship from any cause, for 5 per cent premium.

The committee is assured that the London and St. Katherine Docks

Company has already arranged to fit up vaults with proper appliances for cool storage specially to meet the requirements of the frozen meat and provision trade.

The Australian railway authorities readily provided the necessary trucks suitably fitted for conveying frozen meat to the port of shipment, and a recent telegram informs us that in Victoria ten more are being prepared to meet the increasing trade.

6. As to the operations of the company in England, every effort should be made to induce combined action on the part of all colonial agents and companies with a view to placing the meat in a sound condition before the consumer. Observing that several recent shipments have not realised remunerative rates, your committee made enquiry as to the causes, and finds that the low rates may be traced to (1) a combination of English butchers and salesmen: (2) unsoundness of a portion of the meat, owing to defective packing and stowing on board ship: (3) absence of facilities for keeping the meat in a frozen state after its discharge from the ship. The committee confidently expresses its conviction that the great consequences involved in the success of this business will lead to such complete arrangements as will overcome all the defects above-mentioned.

7. Obtaining a suitable site for the factory is a matter of great importance to the successful working of the company, and the directors will have to exercise great care in making their selection. From experience of companies now working (in other countries), it is found that the operations can best be carried on by having the freezing works away from the port of shipment but adjacent to a line of railway, so as to be connected by siding, and where paddocking can be got for holding the stock until slaughtered.

8. As to the indirect general advantages to the community, it appears to your committee to be self-evident that anything which tends to fix a minimum price for produce gives confidence to producers and to all dependent upon them, consequently giving stability to trade and a fixed value to real property. Such, in the opinion of your committee, is the peculiar suitability of this district for dairy farming, that such an establishment in constant operation, together with a suitable supply of means of shipping being always available, becomes of the first importance, and as a result the committee confidently predicts that instead of the depreciation of the land by the too frequent growth of grain crops, there would be a continuous improvement and a general occupation of the land of the colony to an extent that would be impossible under existing circumstances.

In accordance with the views herein expressed, your committee begs to submit for your approval the prospectus now placed before you, in

which it is proposed to make the capital £20,000, but in the first instance to call up only £10,000 with which to provide site, plant, etc., for the present, leaving £10,000 to be called up when required for extending the operation of the company.

Your committee would only further urge that if a company be formed as proposed, no time should be lost, as a large surplus of stock may be expected to be available at the end of the present summer, and if due notice were given to those who have dairies, a quantity of produce might be prepared in such a condition as would render it most saleable in the English market.

Your committee has laid on the table a large number of circulars, reports and newspaper clippings, having reference to refrigerating machines, from which it will be seen the Haslam surpasses all others, being very compact, less likely to get out of order, and delivering the cold air almost dry. There is little or no deposit of snow, consequently the meat is kept dry and has a much better appearance when thawed than that frozen by other machines: the machine can also be kept constantly going if required, as, there being no accumulation of snow, the air troughs do not become choked as is the case with the Bell-Coleman and Giffard machines. The following is an estimate of the cost of the various machines delivered f.o.b. London, including boilers and all extras:

The Bell-Coleman Co., to discharge 60,000 ft. per hour	£2,635
" " " " " " 40,000 " " "	£2,040
" Giffard Co., " " 25,000 " " "	£1,802
" Haslam Co., " " 40,000 " " "	£2,655
J. & F. Hall machine " " 30,000 " " "	£2,090
J. & H. Gwynne " " " 45,000 " " "	£3,412

Your committee has not taken further note of the cost of shipping and placing the frozen meat in the English market, than by a reference to the statements already made public of the shipments by the *Protos*, etc., from which it appears that the cost is about 2½d. per lb. It may be fairly inferred that inasmuch as these were the first of an entirely new undertaking, experience and competition will speedily lead to a reduction in all costs and charges.

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